

ONE HUNDRED FOURTH LEGISLATURE

FIRST SESSION

**LEGISLATIVE RESOLUTION 200**

Introduced by Mello, 5; Bolz, 29; Haar, 21; Hilkemann, 4; Kintner, 2; Kuehn, 38; Nordquist, 7; Stinner, 48; Watermeier, 1; Williams, 36.

PURPOSE: The purpose of this resolution is to study the history and development of the Nebraska Innovation Campus (NIC) at the University of Nebraska - Lincoln. The University of Nebraska indicates that to move the NIC forward, additional state financial support will be required in terms of both operations and facility construction. The study of the NIC shall include, but not be limited to, the following:

- (1) The history of funding, both public and private;
- (2) The governance structure and management systems;
- (3) The business development plans and recruitment efforts;
- (4) The branding and marketing strategies;
- (5) The partnerships with private corporations, government agencies, and other academic institutions;
- (6) University of Nebraska commercialization activities;
- (7) The competitiveness of lease rates;
- (8) The utilization of space;
- (9) The current availability of other sources of funds for expansion including federal and private funding;
- (10) An investigation of successful university research park and technology commercialization programs across the nation;
- (11) The development of successful strategies for the future including economic development opportunities, workforce development opportunities, and incentive strategies; and
- (12) The development of measurable outcomes to evaluate progress.

NOW, THEREFORE, BE IT RESOLVED BY THE MEMBERS OF THE ONE HUNDRED FOURTH LEGISLATURE OF NEBRASKA, FIRST SESSION:

1. That the Appropriations Committee of the Legislature shall be designated to conduct an interim study to carry out the purposes of this resolution.

2. That the committee shall upon the conclusion of its study make a report of its findings, together with its recommendations, to the Legislative Council or Legislature.

NEBRASKA INNOVATION CAMPUS (NIC) TIMELINE  
2005 THROUGH AUGUST 2015

THE UNIVERSITY OF CHICAGO  
DEPARTMENT OF CHEMISTRY



## Reference Materials for LR200 – Nebraska Innovation Campus

- Nebraska Innovation Campus (NIC) Timeline 2005 through August 2015.
  
- State-by-State Information on
  - State-supported higher education institutions affiliated with a Research and Technology Park
  - Education Commission of the States (ECS) – statutes incentivizing R+D at colleges and universities to spark start-ups, and other research park references.
  
- Chronicle of Higher Education articles
  - State Fair Stands in the Way of U. of Nebraska’s Proposed Research Park, December 12, 2007
  - The Research Drain, May 8, 2011
  - Seeking Hip Worker Environs, Universities Remake Research Parks, October 21, 2014.
  - Why Universities Alone Aren’t Going to Save Your Economy, April 6, 2015.
  
- Strategic Framework Report, Federal Research Expenditures, Office of the Executive Vice President and Provost, University of Nebraska, June 2015.
  
- Reports
  - CHARACTERISTICS AND TRENDS IN NORTH AMERICAN RESEARCH PARKS: 21<sup>ST</sup> CENTURY DIRECTIONS; Prepared by Battelle Technology Partnership Practice; Developed in Cooperation with: Association of University Research Parks; October 2007.
  - Understanding Research, Science and Technology Parks: Global Best Practice: Report of a Symposium; Charles W. Wessner, Editor; Committee on Comparative Innovation Policy Best Practices for the 21<sup>st</sup> Century; National Research Council
  - Driving Regional Innovation and Growth, The 2012 Survey of North American University Research Parks; Prepared for Association of University Research Parks (AURP) By Battelle Technology Partnership Practice, August 2013

- THE POWER OF PLACE, A National Strategy For Building America's Communities Of Innovation; Association of University Research Parks

## LR200 Nebraska Innovation Campus

### Questions for LESN Listserve

1. Is one or more of your state-supported institutions of higher education affiliated with a Research and Technology Park? If yes, please name the institution(s) and the Research and Technology Park.
2. Is the Research and Technology Park a non-profit 501(C)3 entity?
3. Have State General Funds been provided for the general operation of the Research and Technology Park e.g. staff, operating and maintenance costs?
4. Have State General Funds been provided for capital construction projects associated with the facilities at the Research and Technology Park? If yes, were State General Funds contingent upon receiving private funds?
5. Has your State established tax-preferential zones on college or university campuses for the development of new start-up business or for the expansion of joint public/private research ventures, etc.?



## Nebraska Innovation Campus (NIC) Timeline

1. **2005.** President Milliken's installation speech: "Leading economic research points to universities as important hubs of creative activity that spur technology and innovation-based development. This is the case in California, Massachusetts and North Carolina. For Nebraska to be competitive, it must also be true here ... We must maintain our cherished agricultural heritage and at the same time develop new industries, new technologies ... new opportunities that will expand Nebraska's economy and allow us to be competitive."
2. **November 2006.** Lincoln business and civic leaders form Vision 2015 to develop plans that will "strengthen research and education, create jobs and provide new entertainment and cultural opportunities for Lincoln and Nebraska." Among the organization's priorities are to strengthen R&D at UNL and support a research and development campus.
3. **February 2007.** Governor Heineman and President Milliken visit North Carolina research campuses that could serve as models for Nebraska Innovation Campus (NIC).
4. **November 2007.** Regents visit North Carolina research campuses.
5. **December 14, 2007.** President Milliken's testimony, Legislature's Ag Committee. "We think the choice is clear: the best use of State Fair Park is for the Nebraska Innovation Campus.
6. **February 26, 2008.** Testimony of President Milliken, Legislature's Ag Committee.
7. **March 7, 2008.** Board of Regents Innovation Campus Resolution.
8. **March 31, 2008.** the Ag Committee introduced AM2629 to LB1116 regarding moving the State Fair from State Fair Park in Lincoln to Fonner Park in Grand Island at a cost of \$42 million. \$21.5 million from the University; \$8.5 million from Grand Island; \$7 million from the State Fair Board and \$5 million from the State. The \$21.5 million from the University: \$15 million Cash/Revolving (70%) and \$6.5 million private (30%).
9. **April 2008.** LB1116 approved by a vote of 44-3-2 to transfer the State Fair Park to the University.
10. **April 2009.** UNL names SmithGroup/JJR to serve as Innovation Campus master planner and Noddle Companies to craft a business development strategy.
11. **November 20, 2009.** The Board of Regents approved the Master and Business Plan for NIC.
12. **December 09, 2009.** The Board of Regents approved the transfer of title of the Nebraska State Fairgrounds from the State of Nebraska to the Regents, as provided by law.
13. **April 16, 2010.** The Articles of Incorporation and Bylaws of the Nebraska Innovation Campus Development Corporation (NICDC) were approved by the Board of Regents.
14. **April 16, 2010.** The Board of Regents appoints Nebraska Innovation Campus Development Corporation (NICDC) Board of Director's with 5 private sector and 4 university representatives.
15. **January 2011.** Governor Heineman recommends \$25 million state investment in NIC.
16. **February 2011.** The Appropriations Committee recommends support of the Governor's recommendation for funding NIC.
17. **February 24, 2011.** NICDC Board of Directors signed an agreement with Nebraska Nova Development LLC to carry out the 1<sup>st</sup> phase of development at NIC. (Nebraska Nova Development LLC manager Zach Wiegert) Nebraska Nova's managing partner is Woodbury Corp., a Utah-based development firm. Nebraska Nova initially will develop infrastructure at NIC such as roads and sewers to allow for construction of other facilities planned in Phase I,

including a life sciences research center, a public-private office and lab building, a renovated 4-H building and a USDA Ag Research facility.

18. **February 24, 2011** University Fact Sheet – Planned funding sources for Phase I
  - Infrastructure: \$14M – Community Development/TIF
  - Life Sciences Research Collaboration Center: \$45M – State (\$15M); Developer (\$30)
  - 4-H Building: \$20M – State (\$10M Conference Center); Developer (\$10M office/lab)
  - 4-H Parking: \$1.5M – Community Development/TIF
  - **USDA/ARS: \$39.9M – Federal/Donor and/or University Funds**
  - Public/Private Office and Lab Space: \$25M Developer Financed
  - Future Phase I Buildings: \$79.9M Developer Financed
19. **2012.** The City of Lincoln negotiated a redevelopment agreement that allows for the use of TIF to fund public improvements associated with Phase I development including construction of infrastructure and the rehab and construction of four or more buildings – estimated at \$10,739,724.
20. **February 2014.** The Board of Regents approved leasing \$4.5 million in space or 117,000 s.f. for the Food Science and Technology Department to increase UNL's footprint at NIC from its original 90,000 s.f.. Perlman said, it has constituted "a significant drain on university resources." The addition of classrooms at NIC will necessitate the introduction of a bus service estimated at \$636,000 annually.
21. **February 21, 2014.** In consideration for the University assuming a lease on 100% of the SDL II (Site Development Lease) (see item 20. Above), Nebraska Nova agrees to (1) immediately proceed with design and programming for 80,000 GSF at NIC for future tenants; (2) will undertake good faith efforts to obtaining leasing commitments acceptable to NICDC; and (3) will begin construction of the same within a reasonable time not to exceed 18 months after occupancy of the life Sciences Collaboration Center/Food Innovation Center.
22. **September 19, 2014.** , the BOR approved \$3M in private donations and cash funds to build more classrooms, student commons areas and greenhouse space in the Food Innovation Center.
23. **September 2014.** The University requests \$4 million State General Funds over the 2 years of the 2015-17 biennium. Funds were requested for personnel including development and recruitment staff and to lease additional space.
24. **September 19, 2014.** Presentation to the Board of Regents – Currently Building Phase I
  - Innovation Commons – North Building (65,000 s.f.); Innovation Commons – South Building (90,000 s.f.); Food Innovation Center – Lab Building (85,000 s.f.); Food Innovation Center (90,000 s.f.); Greenhouse Innovation Center (45,000 s.f.); CRES (Operational 4/24/14)
  - Possible data center (Developer built, but potential University use).
  - Originally thought UNL could rely on developer. NICDC Board has concluded the University has to bear responsibility because of the requirement of a University relationship. For now, the university plans to hire its own business development staff and bring recruitment efforts in-house. (Have to fill the campus up with University activities in order to support amenities and have the appearance of activity.)
  - University has had to make considerable investments beyond those originally contemplated such as leasing most of the Food Innovation Center for Food Science

Department; leasing the Greenhouse Innovation Center for the LemnaTech machine; costs associated with Makerspace and Accelerator; the CRES. \*

25. **January 21, 2015.** LB560 introduced by Williams and Morfeld, authorizes \$50 million in NIC capital construction projects - \$25 million State funds; \$25 million private funds. LB560 also created the NIC Building Acceleration Fund. LB560 was not reported out of Committee.
26. **April 21, 2015.** LR200 was introduced to study the history, development and future of NIC
27. **August 6, 2015.** Additional space was leased for the Daugherty Water for Food Institute.

CRES Centralized Renewable Energy System -  
an innovative approach to provide heating &  
cooling to buildings @ NIC. (Thermal energy  
transferred to & from City's treated waste  
water)

Jan. 24, 2014 - BOR approved \$12 M in  
NU Corp. Bonds. Source of repayment?





## Nebraska Innovation Campus (NIC) Timeline

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STATE-BY-STATE INFORMATION

## PROBABILITY AND STATISTICS

### CHAPTER 1: INTRODUCTION

#### 1.1. DEFINITIONS AND NOTATION

#### 1.2. BASIC PROPERTIES

#### 1.3. COMBINATORICS

#### 1.4. PERMUTATIONS

#### 1.5. COMBINATIONS

#### 1.6. BINOMIAL COEFFICIENTS

#### 1.7. PAWSON'S THEOREM

#### 1.8. PROBABILITY

#### 1.9. STATISTICS

#### 1.10. PROBABILITY DISTRIBUTIONS

#### 1.11. STATISTICAL INFERENCE

#### 1.12. PROBABILITY THEORY

#### 1.13. STATISTICAL THEORY

#### 1.14. PROBABILITY THEORY

#### 1.15. STATISTICAL THEORY

#### 1.16. PROBABILITY THEORY

#### 1.17. STATISTICAL THEORY

#### 1.18. PROBABILITY THEORY

#### 1.19. STATISTICAL THEORY

#### 1.20. PROBABILITY THEORY

#### 1.21. STATISTICAL THEORY



ARIZONA





Fifty-second Legislature - First Regular Session

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A. The board shall not lease real property located in an area defined as a research park pursuant to section 35-701 unless the lease contains a covenant that prohibits unlimited manufacturing on the site and allows the board to enforce the covenant by appropriate means, which may include termination of the lease.

B. The board may take title to and lease improvements ~~constructed on land~~ located in an area defined as a research park pursuant to section ~~35-701~~ if the lease contains a covenant that restricts the use of the subject property to the uses permitted under this section. The lease shall allow the board to enforce the covenant by appropriate means, including termination of the lease. The board may lease unimproved lots or parcels located in an area defined as a research park pursuant to section 35-701 for any use by a lessee.

C. The requirements of subsection B of this section do not apply to improvements constructed before July 20, 1996 or to a lease entered into between the board and a lessee, subsidiary, successor, sublessee or assignee of a lessee, who originally entered into any lease with the board before July 31, 1996.

D. The subject property may be used only for the following purposes:

1. Laboratories, offices and other facilities for testing, consulting and information processing, related to research and development.
2. Production, assembly or sale of products pursuant to research and development activities.
3. Pilot plants in which processes planned for use in production elsewhere can be tested and assembled.
4. Regional or national headquarters of the lessee or its subsidiaries that are engaged in research and development or education activities.
5. Education and training facilities.
6. Operations required to maintain or support any permitted use, including maintenance shops, power plants, wastewater treatment facilities, the keeping of animals, machine shops, common area improvements and facilities and professional and commercial services supporting permitted uses, such as child development centers, food services and post office and mailing centers.

*check*



ARKANSAS



AR

A.C.A. § 14-144-101

This chapter may be cited as the "Research Park Authority Act".

A.C.A. § 14-144-102

§ 14-144-102. Legislative intent

Currentness

- (a)(1) It is the intent of the General Assembly to maximize the benefits to be derived from Arkansas's institutions of higher education. Therefore it is necessary to provide an environment conducive to the creation and retention of businesses that develop through Arkansas's colleges and universities.
- (2) In many instances, these businesses are founded by entrepreneurs engaged in research, and it is imperative that research facilities be made available in the State of Arkansas to encourage, house, and support these developing entrepreneurs and businesses.
- (3) This chapter is intended to provide a mechanism by which appropriate research facilities may be developed, funded, and operated for the purpose of supporting and retaining Arkansas entrepreneurs and businesses dependent upon research for their further development.
- (b) It is further intended that the research parks created under this chapter shall serve as a catalyst for community growth and transformation and as centers for community planning and improvement.

A.C.A. § 14-144-103

§ 14-144-103. Definitions

Currentness

As used in this chapter:

- (1) "Accredited institution of higher education" means a four-year public college or university that offers bachelor's degrees and is recognized by the Department of Higher Education for credit;
- (2) "Construct" means to acquire or build, in whole or in part, in the manner and by the method, including contracting for the acquisition or building, and if the latter, by negotiation or bids upon the terms and pursuant to the advertising, as the research park authority shall determine to be in the public interest and necessary under the circumstances existing at the time to accomplish the purposes of and authorities under this chapter;
- (3) "County" means any county in this state;
- (4)(A) "Development" means the translation of research findings or other knowledge into a plan or design for a new product or process or for a significant improvement to an existing product or process whether intended for sale or use.
- (B) "Development" includes the conceptual formulation, design, and testing of all forms of software content, product alternatives, construction of prototypes, and operation of pilot plants;
- (5) "Equip" means to install or place on or in any building or structure, equipment of any and every kind, whether or not affixed, including without limitation:
  - (A) Air conditioning equipment;
  - (B) Building service equipment;
  - (C) Fixtures;
  - (D) Furnishings;
  - (E) Furniture;
  - (F) Heating equipment;
  - (G) Machinery; and
  - (H) Personal property of every kind;
- (6) "Facilities" means any real property, personal property, or mixed property of any kind that can be used or that will be useful to accomplish the purposes of this chapter, including without limitation:
  - (A) Equipment;
  - (B) Fixtures;
  - (C) Furnishings;
  - (D) Furniture;
  - (E) Instrumentalities;
  - (F) Machinery;
  - (G) Materials;

- (H) Rights-of-way;
- (I) Roads and streets;
- (J) Utilities; and
- (K) Other real, personal, or mixed property;
- (7) "Governing body" means :
  - (A) For a municipality, the city council or board of directors;
  - (B) For a county, the quorum court;
  - (C) For an institution of higher education, the board of trustees;
  - (D) For a state agency, the Governor; and
  - (E) For a research institute or center, the board of directors of the 501(c)(3) or 501(c)(6) entity;
- (8) "Lease" means to lease for rental, for periods, and upon terms and conditions the research park authority shall determine, including without limitation:
  - (A) The granting of renewal or extension options upon terms and conditions the authority shall determine; and
  - (B) The granting of purchase options at prices and upon terms the authority shall determine;
- (9) "Municipality" means a city of the first class, a city of the second class, or an incorporated town;
- (10) "Person" means any natural person, partnership, corporation, association, limited liability company, organization, business trust, foundation, trust, and public or private person;
- (11) "Research" means planned research or critical investigation aimed at the discovery of new knowledge to create a new product or service or a new process or technique or to bring about a significant improvement in an existing product or process;
- (12) "Research institute or center" means a nonprofit or government-owned or operated organization that has a presence in Arkansas and is involved with performing research for processes, products, techniques, or services;
- (13) "Research park" means an area of a municipality or county with defined boundaries that is the site of one (1) or more buildings housing persons that are engaged in research and development projects under this chapter;
- (14) "Research park authority" means a public entity created under this chapter to provide facilities and support for businesses engaged in research and development in pursuit of economic development opportunities;
- (15)(A) "Sell" means to sell for a price, in a manner, and upon terms the authority determines, including without limitation private or public sale.
  - (B)(i) If the sale is public, the authority shall advertise the sale and shall determine whether the sale shall be for cash or credit payable in lump sum or in installments over a period the authority shall determine.
  - (ii) If the sale is for credit, the authority shall determine whether the credit shall be with or without interest and at what rate; and
- (16) "State" means the State of Arkansas.

#### § 14-144-104. Construction

##### Currentness

- (a) This chapter shall be liberally construed to accomplish its intent and purposes and shall be the sole authority required for the accomplishment of its purpose.
- (b) To this end:
  - (1) It shall not be necessary to comply with the general provisions of other laws dealing with public facilities and their acquisition, construction, leasing, encumbering, or disposition, except to the extent provided for in § 14-206-101 et seq., § 14-207-101 et seq., and § 18-15-501 et seq.; and
  - (2) Section 15-5-303 shall not apply.

#### A.C.A. § 14-144-201

### § 14-144-201. **Research park authority--Creation**

##### Currentness

- (a)(1) A **research park authority**:
  - (A) Shall have as sponsor at least one (1) accredited institution of higher education; and
  - (B) May have one (1) or more:



(i) Municipality;

(ii) County;

(iii) State agency; or

(iv) Research institute or center.

(2) One (1) or more sponsors who meet the requirements of subdivision (a)(1) of this section may create a **research park** authority under this chapter for the purpose of acquiring, constructing, maintaining, and operating a **research park**.

(b) A county or municipality shall not participate in a **research park** authority unless the governing body of the county or municipality:

(1) Provides by ordinance to participate in the **research park** authority; and

(2) Enters into an agreement with at least one (1) accredited institution of higher education to create and maintain the **research park** authority.

(c) An accredited institution of higher education shall not participate in a **research park** authority unless the governing body of the accredited institution of higher education adopts a resolution to participate in the **research park** authority.

(d) A **research park** shall be located either within:

(1) The geographical boundaries of a county or municipality that is a sponsor of the **research park** authority; or

(2) The main campus or in the proximity of the main campus of the sponsoring accredited institution of higher education that is a sponsor of the **research park** authority.

(e)(1) A sponsor of a **research park** authority shall enter into an agreement establishing the terms and conditions for the operation of the authority under this chapter and any other laws of the State of Arkansas that may be applicable.

(2) To the extent that it is consistent with this chapter, the agreement shall specify the information provided for in the Interlocal Cooperation Act, § 25-20-101 et seq.

(3) The agreement may also provide for each authority to furnish the participating sponsor or sponsors copies of its annual budget for examination and approval.

(4) The agreement shall be filed with the Secretary of State.

(f) By action of the **research park** authority board, a **research park** authority established under this chapter may add one (1) or more sponsors to the creating sponsors under subdivision (a)(1)(B) of this section.

CALIFORNIA



# GOVERNMENT CODE

## SECTION 12099-12099.7

12099. The Legislature finds and declares all of the following:

(a) Job creation through rapid technology commercialization is a vital part of the state's economic well-being, as identified in a January 2012 symposium held by the Brookings Institute.

(b) Innovation and tech-driven entrepreneurial activity coupled with venture investment creates small business startups and expansions at an accelerated rate, which leads to significant employment opportunities that contribute to the state's financial health and economic competitiveness.

(c) In order to maintain a healthy state economy and to aid communities, entrepreneurship and technology-based small businesses must be stimulated and supported.

(d) The Innovation Hubs (iHubs) are operated in California through a cooperative agreement between the Governor's Office of Business and Economic Development (GO-Biz) and geographically distinct regions, all of which are partnered with public universities, community college districts, local governments, research institutions, industry, angel and venture capital networks, and traditional financial institutions. The iHubs are California's premier resource for facilitating the success of entrepreneurial and small technology startups that can grow California's economy by assisting business owners in creating and retaining jobs, increasing sales and profits, securing business financing, and creating a successful new business climate in the state.

(e) The iHubs' economic impact in fostering entrepreneurial business activity leads to job creation and an innovation in the economy by establishing a formal partnership between the office and the iHub program.

(f) It is necessary to establish a fund that would enable the office to obtain funding from private sources, for appropriation to state designated iHubs, iHub partner organizations, and within state iHub-designated regions for the purpose of establishing, promoting, and enhancing California's innovation and entrepreneurship ecosystem.

12099.1. (a) The California Innovation Hub Program is hereby created within the office.

(b) The office shall designate Innovation Hubs within the state to stimulate partnerships, economic development, and job creation by leveraging assets to provide an innovation platform for startup businesses, economic development organizations, business groups, and venture capitalists. The assets may include, but are not limited to, research parks, technology incubators, universities, and federal laboratories.

(c) The office shall oversee, coordinate, and provide assistance to each iHub.

12099.2. For purposes of this article, the following terms shall be

defined as follows:

(a) "Applicant" means one or more entities that submit an application to GO-Biz. Eligible applicants shall be one or more of the following:

- (1) A fully accredited institution of higher education.
- (2) A private nonprofit corporation engaged in economic development activities.
- (3) A county or municipality in this state that has a preexisting economic development department or program or both.
- (4) A public economic development institution such as a workforce investment board or an economic development corporation.

(b) "Innovation Hub" or "iHub" means a partnership between interrelated firms, local governments, economic development organizations, educational entities, and industries that collectively drive economic growth within a defined geographic area.

(c) "iHub coordinator" means the individual or entity agreed to by the iHub partnership that is responsible for all of the following:

- (1) Implementing the objectives of the iHub.
- (2) Serving as the primary agent responsible for coordinating services and resources and maintaining the iHub partnership.
- (3) Serving as the primary liaison to the state and the office.

12099.3. (a) The office shall issue a request for proposals for the California Innovation Hub Program.

(b) An applicant's proposal shall include, but shall not be limited to, all of the following information:

- (1) A statement of purpose.
- (2) A signed statement of cooperation and a description of the roles and relationships of each entity involved in the iHub partnership.
- (3) A designated iHub coordinator.
- (4) A clear explanation and map conveying the iHub's physical boundary.
- (5) A clearly stated designee to coordinate iHub activities.
- (6) A clearly identified central location.
- (7) Clearly identified benchmarks or milestones with approximate dates as to when they will be achieved.
- (8) A complete budget including a description of secured funds with proof, pending funds, and potential future funding sources.
- (9) A list and brief description of local and regional incentives and support programs.
- (10) A clearly articulated commercial market focus and plan.
- (11) A clearly articulated iHub management structure and plan that may include a description of the capabilities, qualifications, and experience of the proposed management team, team leaders, or key personnel who are critical to achieving the proposed objectives.
- (12) A list of iHub assets and resources.
- (13) A clearly articulated focus area of the iHub including industry sectors or other targeted areas for development and growth.
- (14) A list of specific resources available to support and guide startup companies.
- (15) A clearly articulated list of goals to be achieved with the certification of the iHub.
- (16) Expectations for job development and business creation.
- (17) Defined performance standards agreed upon by the partners involved in the development of the iHub.
- (18) Evaluation procedures that will be used to measure the level of achievement for each stated goal.
- (19) A plan for sustainability.

(20) Organizational experience including capabilities, related experience, facilities, techniques, unusual resources, or unique combinations of these that are integral factors for achieving the proposed objectives.

(21) Demonstrated experience with innovation programs such as involvement with technology commercialization.

(22) Demonstrated experience with technology transfer or licensing.

(23) Demonstrated experience with intellectual property management.

(24) Evidence of community engagement and support.

(c) The office may waive any of the requirements listed in subdivision (b).

(d) The office may designate an iHub for a term of not more than five years. An iHub may reapply for a designation without limitation on the number of times.

(e) (1) The iHub designation shall not be official until a memorandum of understanding is entered into by the applicant and the office. The memorandum of understanding shall include the goals and performance standards identified in the application and other related requirements as determined by the office.

(2) For an iHub designated by the office before January 1, 2014, the iHub partnership shall have until September 1, 2014, to enter into a memorandum of understanding with the office that meets the requirements of this article.

(f) More than one iHub may be designated in an area to the extent that there is a clear distinction between the focus area of each iHub.

(g) The office shall set guidelines for approval, designation, re-designation, reporting, redesignation, and dedesignation of iHubs.

(h) An iHub shall annually report to the office on its progress in meeting the goals and performance standards as described in the iHUB application and implementing memorandum of understanding with the office. The office shall annually post the information from these reports on the office Internet Web site and provide notice to the Governor and relevant policy committees of the Legislature that the information is available on the Internet Web site.

12099.4. A designated iHub shall include at least one major university or research center or institute, one economic development organization, and consist of at least four of the following:

(a) A business support organization including a workforce development or training organization, incubator or business accelerator, business technical assistance providers, chamber of commerce, and networking organization that supports innovation.

(b) An educational consortium including technology transfer representatives.

(c) A venture capital network including angel investors.

(d) A business foundation, innovation foundation, science foundation, laboratory research institution, federal laboratory, or research and development facility.

(e) A municipal economic development division or department.

(f) A federal government partner such as a national laboratory.

12099.5. Before an official designation as an iHub, the applicant shall self-certify both of the following:

(a) That the iHub will comply with the state's nondiscrimination

policy.

(b) That the iHub and its principals are current in payment of all state and local taxes owed unless they have entered into an agreement that was deemed satisfactory by the respective taxing authority and are in full compliance with the agreement.

12099.6. (a) An iHub may do all of, but shall not be limited to, the following:

(1) Provide counseling and technical assistance, either by direct or indirect services, in the areas of entrepreneurial business planning and management, financing, and marketing for small businesses.

(2) Provide expert advice to entrepreneurs on starting a business, including legal requirements for starting a business and access to financing opportunities.

(3) Conduct business workshops, seminars, and conferences with local partners including, but not limited to, state universities, state community colleges, local governments, state and federal service providers, private industry, workforce investment boards and agencies, small business development centers, microenterprise development organizations, small business service agencies, economic development organizations, and chambers of commerce.

(4) Facilitate partnerships between innovative startup businesses, research institutions, and venture capitalists or financial institutions.

(b) The iHubs shall, to the extent feasible, do all of the following:

(1) Work in close collaboration with the activities of the office as its primary statewide partner.

(2) Coordinate activities with the Employment Training Panel, the California Workforce Investment Board, the Office of the Chancellor of the California Community Colleges, the University of California, the California State University, and other state economic and workforce development programs.

12099.7. The Innovation Accelerator Account is hereby created within the California Economic Development Fund in the State Treasury. Subject to the approval of the Department of Finance, all moneys collected and received by the Governor's Office of Business and Economic Development for California Innovation Initiatives from gifts, bequests, or donations shall be deposited in the Innovation Accelerator Account. Notwithstanding Section 13340, the moneys in the account are continuously appropriated to the office to be used for California Innovation Initiatives pursuant to the terms of the gift, bequest, or donation.





COLORADO



C.R.S.A. § 23-5-112

§ 23-5-112. Gifts and bequests to institutions of higher education--venture development investment funds

Currentness

(1) All state institutions of higher education are authorized to receive gifts and bequests of money or property which may be tendered to any such institution by will or gift. The governing board of such institution is authorized, subject to the terms of any gift or bequest and to provisions of any applicable law, to hold such funds or property in trust or invest or sell them and use either principal or interest or the proceeds of sale for the benefit of such institutions or the students or others for whose benefit such institutions are conducted.

(2) When a governing board of an institution of higher education is offered a gift of property, whether real or personal, which directly or indirectly involves significant ongoing expenditures, the institution shall require in connection therewith an endowment sufficient to fund such expenses. This subsection (2) shall not apply when the gift has been approved by the Colorado commission on higher education with the understanding that acceptance will require an allocation of state funding and the commission is satisfied that provision therefor can be made within available resources. The commission shall prepare a statement of procedures of review and of criteria to be applied in its review of any such gifts, which shall have the approval of the governor and joint budget committee.

(3) Nonprofit entities such as foundations, institutes, and similar organizations organized for the sole benefit of one or more state institutions of higher education shall be entitled to receive gifts and bequests of money or property which may be tendered to any such entity by will or gift. Such gifts and bequests are subject to audit by the state auditor or his designee. If the entity is entirely separate and apart from the institution, if no employees of the institution serve as staff or as voting members of the entity's board, and if the funds and accounts of the entity are entirely separate from those of the institution, such gifts and bequests shall be subject to annual audit to be performed by an independent accounting firm engaged by the entity if determined in advance to be satisfactory to the legislative audit committee. The state auditor shall have access to all of the accountant's work papers. If, alternatively, the separate relationship does not prevail, members and employees of the board of the entity may include staff members or employees of the institution, and such gifts and bequests shall be subject to audit by the state auditor or his designee.

(4)(a) Each state institution of higher education may elect to establish a venture development investment fund for the purpose of facilitating the commercialization of research projects conducted at a research institution of the institution or a research institution that has an office of technology transfer. A venture development fund may be administered by a nonprofit entity such as a foundation, institute, or similar organization that is affiliated with the institution.

(b) The purposes of a venture development investment fund established by a state institution of higher education pursuant to this section shall include, but need not be limited to, providing the following:

- (I) Capital for entrepreneurial programs that are associated with the institution;
- (II) Opportunities for students of the institution to gain experience in applying research to commercial activities;
- (III) Proof-of-concept funding for the purpose of transforming research and development concepts into commercially viable products or services; and
- (IV) Entrepreneurial opportunities for persons who are interested in transforming research into viable commercial ventures that create jobs in Colorado.

(c) Each state institution of higher education and each nonprofit entity, such as a foundation, institute, or similar organization, that is affiliated with a state institution of higher education is authorized to seek and accept gifts, grants, and donations to facilitate the establishment of a venture development investment fund.

(d) Individuals, businesses, and other entities are encouraged to donate moneys to research institutions of state institutions of higher education for the purpose of advancing the commercialization of research projects at the research institutions.





Kathy Tenopir &lt;ktenopir@leg.ne.gov&gt;

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## Research and Tech Parks: Colorado

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Josh Abram <Josh.Abram@state.co.us>  
To: ktenopir@leg.ne.gov

Mon, Jun 22, 2015 at 1:42 PM

Good afternoon!

Your colleague from Nebraska has posed the following questions for the group. Don't be alarmed by the number – some require only yes/no answers! Please send responses directly to Kathy Tenopir at ktenopir@leg.ne.gov.

1. Is one or more of your state-supported institutions of higher education affiliated with a Research and Technology Park? If yes, please name the institution(s) and the Research and Technology Park.

A quick internet search shows that Colorado State University is associated with The CENTRE for Advanced Technology. There may be other Research and Technology Parks in the state.

Colorado State University Research Foundation (CSURF), in conjunction with the Everitt Companies of Fort Collins, has developed a multi-use technology park located directly south of the main campus of Colorado State University (CSU). The park provides an environment adjacent to the University for private high tech industry to interface and interact with CSU on a mutually beneficial basis.

see: <http://www.csurf.org/centre.html>

2. Is the Research and Technology Park a non-profit 501(C)3 entity?

Not sure

3. Have State General Funds been provided for the general operation of the Research and Technology Park e.g. staff, operating and maintenance costs?

In Colorado, General Fund support for the institutions of higher ed are made to the governing bodies of the institutions. Those bodies in turn make all budgetary decisions for their institution(s). There are no direct appropriations for Research and Technology Parks.

4. Have State General Funds been provided for capital construction projects associated with the facilities at the Research and Technology Park? If yes, were State General Funds contingent upon receiving private funds?

Again, this is N/A in Colorado. Our capital construction budget for higher education is completely separate from state support for the higher ed institution's general operating.

5. Has your State established tax-preferential zones on college or university campuses for the development of new start-up business or for the expansion of joint public/private research ventures, etc.?

Not to my knowledge but this is an interesting question. I'll ask around some more and if I discover differently, I'll let you know.

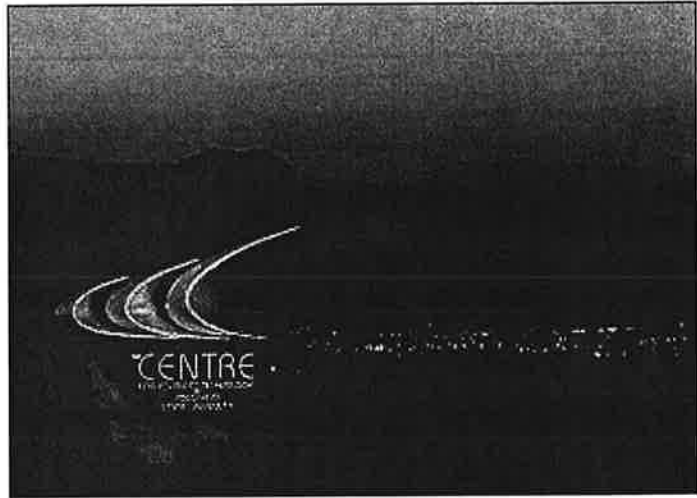
Feel free to call directly if I can clarify or find other Colorado specific info...

Josh

Josh Abram  
Senior Fiscal Analyst  
Colorado Legislative Council  
303-866-3561

## **The CENTRE for Advanced Technology at Colorado State University**

### **A Unique Mixed-use Development.**



Colorado State University Research Foundation (CSURF), in conjunction with the Everitt Companies of Fort Collins, has developed a multi-use technology park located directly south of the main campus of Colorado State University (CSU). The park provides an environment adjacent to the University for private high tech industry to interface and interact with CSU on a mutually beneficial basis.

Studies of university-oriented research parks conclude that those which incorporate mixed-use are most successful. The park, therefore, has a portion of the acreage devoted to retail and commercial uses. A significant portion of the park has and will be developed into sites which will be leased to high technology related firms on a long term basis.

SURF and CSU wish to attract new as well as existing industry to the park. The nationally recognized research programs at CSU in veterinary medicine, life sciences, biotechnology, engineering technology and natural resources has been a major factor in attracting tenants to the park.

The Centre consists of approximately 235 acres directly south of the CSU main campus. Historically, the area has been used for research plots for horticulture, plant pathology, botany, forestry, agronomy, etc. With residential and commercial areas now completely surrounding the parcel, it was realized that a tech park would offer many advantages to research programs at the University as well as opportunities for faculty, staff, students and the entire Fort Collins community.

The objective of The Centre is to create a mutually beneficial relationship between CSU's research programs and private industry - offering numerous advantages to each entity. In addition, revenues from the park will be used to enhance University research programs and activities.

In the fall of 1999, the NRRC (Natural Resources Research Center) opened along with the extension of Centre Avenue from Research Boulevard at Drake Road to Prospect Road.

We encourage you to explore locating at The Centre. CSURF sites are available through a long term lease. We invite your inquiries.

[Map of the Centre and available parcels.](#)

### **ontact Information**

[Julie H. Birdsall](#)  
Chief Financial Officer, Corporate Secretary/Treasurer  
Phone: 970.482.2916

Fax: 970.484.0354

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This page was last updated October 1, 2006.



CONNECTICUT





Kathy Tenopir &lt;ktenopir@leg.ne.gov&gt;

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## Technology Parks

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Adams, Terrance <Terrance.Adams@cga.ct.gov>  
To: "ktenopir@leg.ne.gov" <ktenopir@leg.ne.gov>

Wed, Jun 17, 2015 at 3:30 PM

Hi Kathy,

I work for the Office of Legislative Research in Connecticut. We don't currently have a tech park, but there is one in the works at UConn. In 2011, the legislature authorized about \$170 million in state general obligation bonds for the project, with no contingency requirements.

I'm not entirely sure about the park's operational details, so I don't think I have answers to the 501(c)(3) or operating dollars questions. It's a couple of years from launching, so it's still TBD. I haven't heard anything about a 501(c)(3) stepping in, but I'd imagine it's a distinct possibility.

This is a press release from UConn that, while a little bit dated, describes what the university is envisioning:  
<http://today.uconn.edu/2012/12/university-unveils-master-plan-for-technology-park/>

As far as tax incentives, I know they've been debated here, but I don't believe we've enacted anything.

Hope this helps. Thanks.

Terry

**Terry Adams**  
Connecticut General Assembly

Office of Legislative Research  
Room 5300, Legislative Office Building  
Hartford, CT 06106-1591  
(860) 240-8400



# University Unveils Master Plan for Technology Park

December 7, 2012 By: [Tom Breen](#)  Category: [News & Life](#)



Mary Holz-Clause, vice president for economic development, discusses plans for the new technology park at the Student Union Theatre on Dec. 6. (Peter Morenus/UConn Photo)

Members of the UConn community and the town of Mansfield recently got their first look at the plans for UConn's ambitious new technology park, which is envisioned as an important driver of both research and economic growth in the region.

In presentations at the Student Union and at Mansfield Town Hall on Dec. 6, University officials and a team from the architectural firm Skidmore, Owings & Merrill unveiled the master plan for the long-sought University of Connecticut Technology Park.

"This has been a hope for some time, and it will soon become a reality," said Mary Holz-Clause, the University's vice president for economic development. "The Tech Park will be another

way to use the strength of the University of Connecticut as a research institution to feed innovation and create jobs both in the region and throughout the state in the years ahead."

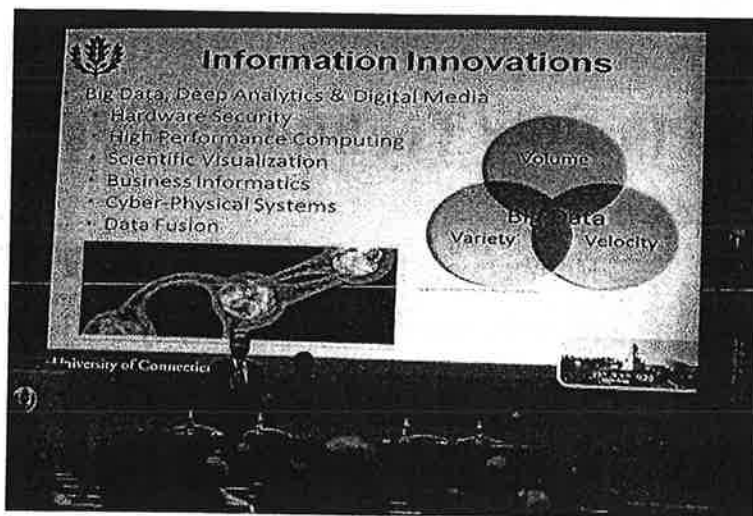
The plan calls for the park to be built on a portion of the University known as North Campus, which is bounded by Route 44, Route 195, and North Eagleville Road. An initial facility of 125,000 square feet, the Innovation Partnership Building, is expected to be completed in 2015, and will feature research equipment, flexible-use laboratories, and business incubator space.

The ultimate goal is to design about 900,000 square feet of building space divided into three "nodes" of several buildings each, connected by footpaths and by the extension of North Hillside Road to Route 44, which will create a new entrance to campus. The plan is to leave much of the area's existing green space intact, while designing a technology park that's in harmony with its environment, said Mark Regulinski, managing director of Skidmore, Owings & Merrill.

"The University has an asset in North Campus that makes it fundamentally different from many tech parks around the country," he said.

The first building is being funded by an allocation of \$170 million in state bonds, an effort championed and led by Senate President Donald Williams (D-Brooklyn) and Rep. Gregg Haddad (D-Mansfield), with the support of Gov. Jannel P. Malloy.

"The University and our visionary partners in state government know the UConn Technology Park will be critical for boosting the whole state economy," Holz-Clause said.



Mun Choi, interim provost, said the kind of work envisioned for the tech park includes additive manufacturing, nanotechnology, genomics, and digital innovation. (Peter Morenus/UConn Photo)

A feasibility analysis by a tech park consulting firm estimated that the park will create between 1,000 and 1,300 jobs in its first decade. The average salary at similar technology parks around the country is roughly \$75,000.

The technology park is the logical next step for a university that's rapidly cementing its reputation as a top research institution, said Mun Choi, interim provost, noting that UConn faculty members won more than \$220 million in research awards in 2012.

"We're already a great research university," Choi said, "but we want to expand our opportunities to work even more closely with increasing numbers of industry partners."

About 8,000 companies are within two hours' drive from UConn that are doing the kind of work envisioned for the tech park, including additive manufacturing, nanotechnology, genomics, and digital innovation, he added.

Ultimately, Choi said, the goal is for the project not just to attract partnerships and faculty from the region, but to draw innovative companies and researchers from around the globe to Storrs.

"We want to bring in partners who want to come to this University because of the resources we have and the skills of our faculty and students," he said.

IOWA





CHAPTER 262B  
COMMERCIALIZATION OF RESEARCH

<p>SUBCHAPTER I GENERAL PROVISIONS</p> <p>262B.1 Title. 262B.2 Legislative intent. 262B.3 Duties and responsibilities. 262B.4 and 262B.5 Repealed by 2005 Acts, ch 150, §33. 262B.6 through 262B.10 Reserved. 262B.11 Reserved. 262B.12 Appropriation. Repealed by 2005 Acts, ch 150, §33.</p>	<p>262B.13 through 262B.20 Reserved.</p>	<p>SUBCHAPTER II RESEARCH AND DEVELOPMENT PLATFORMS</p> <p>262B.21 Research and development platforms. 262B.22 Technology and commercialization resource organization. Repealed by 2007 Acts, ch 122, §6. 262B.23 Endowed chairs and salaries.</p>
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SUBCHAPTER I  
GENERAL PROVISIONS

**262B.1 Title.**

This chapter shall be known and may be cited as the “Commercialization of Research for Iowa Act”.

88 Acts, ch 1268, §9; 2003 Acts, 1st Ex, ch 1, §95, 133

[2003 Acts, 1st Ex, ch 1, §95, 133 amendment to section text rescinded pursuant to *Rants v. Vilsack*, 684 N.W.2d 193]  
2005 Acts, ch 150, §30

**262B.2 Legislative intent.**

It is the intent of the general assembly that the three universities under the control of the state board of regents have as part of their missions the use of their universities’ expertise to expand and stimulate economic growth across the state. This activity may be accomplished through a wide variety of partnerships, public and private joint ventures, and cooperative endeavors, primarily, but not exclusively, in the area of high technology, and may result in investments by the private sector for commercialization of the technology and job creation. It is imperative that whenever possible, the investments and job creation be in Iowa but need not be in the proximity of the universities. The purpose of the investments and job creation shall be to expand and stimulate Iowa’s economy, increase the wealth of Iowans, and increase the population of Iowa, which may be accomplished through research conducted within the state that will competitively position Iowa on an economic basis with other states and create high-wage, high-growth employers and jobs. Accredited private universities located in the state are encouraged to incorporate the intent of this section into the mission of their universities.

88 Acts, ch 1268, §10; 2003 Acts, 1st Ex, ch 1, §96, 133

[2003 Acts, 1st Ex, ch 1, §96, 133 amendment to this section rescinded pursuant to *Rants v. Vilsack*, 684 N.W.2d 193]  
2005 Acts, ch 150, §31

**262B.3 Duties and responsibilities.**

1. The state board of regents, as part of its mission and strategic plan, shall establish mechanisms for the purpose of carrying out the intent of this chapter. In addition to other board initiatives, the board shall work with the economic development authority, other state agencies, and the private sector to facilitate the commercialization of research.

2. The state board of regents, in cooperation with the economic development authority, shall implement this chapter through any of the following activities:

- a. Developing strategies to market and disseminate information on university research for commercialization in Iowa.
  - b. Evaluating university research for commercialization potential, where relevant.
  - c. Developing a plan to improve private sector access to the university licenses and patent information and the transfer of technology from the university to the private sector.
  - d. Identifying research and technical assistance needs of existing Iowa businesses and start-up companies and recommending ways in which the universities can meet these needs.
  - e. Linking research and instruction activities to economic development.
  - f. Reviewing and monitoring activities related to technology transfer.
  - g. Coordinating activities to facilitate a focus on research in the state's targeted industry clusters.
  - h. Surveying similar activities in other states and at other universities.
  - i. Establishing a single point of contact to facilitate commercialization of research.
  - j. Sustaining faculty and staff resources needed to implement commercialization.
  - k. Implementing programs to provide public recognition of university faculty and staff who demonstrate success in technology transfer and commercialization.
  - l. Implementing rural entrepreneurial and regional development assistance programs.
  - m. Providing market research ranging from early stage feasibility to extensive market research.
  - ✓ n. Creating real or virtual research parks that may or may not be located near universities, but with the goal of providing economic stimulus to the entire state.
    - o. Capacity building in key biosciences platform areas.
    - p. Encouraging biosciences entrepreneurship by faculty.
    - q. Providing matching grants for joint biosciences projects involving public and private entities.
    - r. Encouraging biosciences entrepreneurship by faculty using faculty research and entrepreneurship grants.
    - s. Pursuing bioeconomy initiatives in key platform areas as recommended by a consultant report on bioeconomy issues contracted for by the economic development authority.
3. Each January 15, the state board of regents shall submit a written report to the general assembly detailing the patents and licenses held by each institution of higher learning under the control of the state board of regents and by nonprofit foundations acting solely for the support of institutions governed by the state board of regents.
- 88 Acts, ch 1268, §11; 2003 Acts, 1st Ex, ch 1, §97, 133  
 [2003 Acts, 1st Ex, ch 1, §97, 133 amendments to this section rescinded pursuant to *Rants v. Vilsack*, 684 N.W.2d 193]
- v. 2005 Acts, ch 150, §32; 2011 Acts, ch 118, §85, 89  
 Technology commercialization specialist, committee, and officer; §15.115 - 15.117

**262B.4 and 262B.5** Repealed by 2005 Acts, ch 150, §33.

**262B.6 through 262B.10** Reserved.

**262B.11** Reserved.

**262B.12 Appropriation.** Repealed by 2005 Acts, ch 150, §33.

**262B.13 through 262B.20** Reserved.

SUBCHAPTER II  
RESEARCH AND DEVELOPMENT  
PLATFORMS

**262B.21 Research and development platforms.**

1. For purposes of this section and section 262B.23, “core platform areas” means the areas of advanced manufacturing, biosciences, information solutions, and financial services.
  2. The state board of regents shall do all of the following:
    - a. Recruit employees, build capacity, and invest moneys to ensure rapid scientific progress in the core platform areas.
    - b. Create endowed chair positions and employ persons with entrepreneurial expertise.
    - c. Invest in technology development infrastructure to strengthen and accelerate the scientific and commercialization work in the core platform areas.
    - d. Provide financial assistance in the form of grants for purposes of accelerating the transformation of new and ongoing research and development initiatives in the core platform areas into commercial opportunities.
    - e. Actively participate in advisory groups dedicated to the areas of bioscience advanced manufacturing, and information solutions.
- 2006 Acts, ch 1179, §48; 2007 Acts, ch 122, §5

**262B.22 Technology and commercialization resource organization.** Repealed by 2007 Acts, ch 122, §6.

**262B.23 Endowed chairs and salaries.**

The state board of regents may use for salaries and may create endowed chair positions at each of the regents universities using, in part, moneys appropriated to the state board of regents for purposes of implementing recommendations provided in separate consultant reports on bioscience, advanced manufacturing, and information technology submitted to the department of economic development in the calendar years 2004 and 2005. Such moneys may only be used to partially fund an endowed chair position if significant private contributions and contributions from governmental entities other than the state and political subdivisions of the state are used to fund the position. Not more than fifty percent of the cost of funding an endowed chair position shall be paid with such moneys. The endowed chair positions shall be used to attract scholars recruited nationally and internationally who can bring with them related start-up business ventures or a concept for near-term commercialization. ✓

2006 Acts, ch 1179, §50

Referred to in §262B.21



KANSAS





Kathy Tenopir &lt;ktenopir@leg.ne.gov&gt;

**RE: Answers to your questions**

**Shirley Morrow** <Shirley.Morrow@klrd.ks.gov>  
 To: "ktenopir@leg.ne.gov" <ktenopir@leg.ne.gov>

Mon, Jun 22, 2015 at 4:47 PM

Here is an update to question 2 below: , a nonprofit entity has been established to oversee the WSU Innovation Campus. It is called Wichita State Innovation Alliance (WSIA).

Shirley D. Morrow, Principal Fiscal Analyst

Legislative Research Department

68-West - State Capitol Building

300 SW Tenth Avenue

Topeka, KS 66612-1504

shirley.morrow@klrd.ks.gov

785-296-3181

**From:** Shirley Morrow  
**Sent:** Monday, June 22, 2015 10:16 AM  
**To:** 'ktenopir@leg.ne.gov'  
**Subject:** Answers to your questions

1. Is one or more of your state-supported institutions of higher education affiliated with a Research and Technology Park? If yes, please name the institution(s) and the Research and Technology Park. Yes, Wichita State University – Innovation Campus
2. Is the Research and Technology Park a non-profit 501(C)3 entity? ~~No~~ *See above update*
3. Have State General Funds been provided for the general operation of the Research and Technology Park e.g. staff, operating and maintenance costs? \$2.0 million
4. Have State General Funds been provided for capital construction projects associated with the facilities at the Research and Technology Park? If yes, were State General Funds contingent upon receiving private funds? 0 million
5. Has your State established tax-preferential zones on college or university campuses for the development of new start-up business or for the expansion of joint public/private research ventures, etc.? No

**Shirley D. Morrow, Principal Fiscal Analyst**

**Legislative Research Department**

**68-West - State Capitol Building**

**300 SW Tenth Avenue**

**Topeka, KS 66612-1504**

**shirley.morrow@klrd.ks.gov**

**785-296-3181**



KENTUCKY



**65.7045 Definitions for KRS 65.7041 to 65.7083.**

As used in KRS 65.7041 to 65.7083:

- (1) "Activation date" means the date established any time within a two (2) year period after the commencement date. The activation date is the date on which the time period for the pledge of incremental revenues shall commence. The governing body may extend the two (2) year period to no more than four (4) years upon written application by the agency requesting the extension. To implement the activation date, the agency that is a party to the local participation agreement or the local development area agreement shall notify the governing body that created the development area or local development area;
- (2) "Agency" means:
  - (a) An urban renewal and community development agency established under KRS Chapter 99;
  - (b) A development authority established under KRS Chapter 99;
  - (c) A nonprofit corporation;
  - (d) A housing authority established under KRS Chapter 80;
  - (e) An air board established under KRS 183.132 to 183.160;
  - (f) A local industrial development authority established under KRS 154.50-301 to 154.50-346;
  - (g) A riverport authority established under KRS 65.510 to 65.650; or
  - (h) A designated department, division, or office of a city or county;
- (3) "Arena" means a facility which serves primarily as a venue for athletic events, live entertainment, and other performances, and which has a permanent seating capacity of at least five thousand (5,000);
- (4) "Authority" means the Kentucky Economic Development Finance Authority established by KRS 154.20-010;
- (5) "Brownfield site" means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant;
- (6) "Capital investment" means:
  - (a) Obligations incurred for labor and to contractors, subcontractors, builders, and materialmen in connection with the acquisition, construction, installation, equipping, and rehabilitation of a project;
  - (b) The cost of acquiring land or rights in land within the development area on the footprint of the project, and any cost incident thereto, including recording fees;
  - (c) The cost of contract bonds and of insurance of all kinds that may be required or necessary during the course of acquisition, construction, installation, equipping, and rehabilitation of a project which is not paid by the contractor or contractors or otherwise provided;
  - (d) All costs of architectural and engineering services, including test borings,

surveys, estimates, plans, specifications, preliminary investigations, supervision of construction, and the performance of all the duties required by or consequent upon the acquisition, construction, installation, equipping, and rehabilitation of a project;

- (e) All costs that are required to be paid under the terms of any contract for the acquisition, construction, installation, equipping, and rehabilitation of a project; and
- (f) All other costs of a nature comparable to those described in this subsection;
- (7) "City" means any city, consolidated local government, or urban-county government;
- (8) "Commencement date" means:
  - (a) The date on which a local development area agreement is executed; or
  - (b) The date on which a local participation agreement is executed;
- (9) "Commonwealth" means the Commonwealth of Kentucky;
- (10) "County" means any county, consolidated local government, charter county, unified local government, or urban-county government;
- (11) "Debt charges" means the principal, including any mandatory sinking fund deposits, interest, and any redemption premium, payable on increment bonds as the payments come due and are payable and any charges related to the payment of the foregoing;
- (12) "Development area" means an area established under KRS 65.7049, 65.7051, and 65.7053;
- (13) "Economic development projects" means projects which are approved for tax credits under Subchapter 20, 22, 23, 24, 25, 26, 27, 28, 34, or 48 of KRS Chapter 154;
- (14) "Establishment date" means the date on which a development area or a local development area is created. If the development area, local development area, development area plan, or local development area plan is modified or amended subsequent to the original establishment date, the modifications or amendments shall not extend the existence of the development area or local development area beyond what would be permitted under KRS 65.7041 to 65.7083 from the original establishment date;
- (15) "Governing body" means the body possessing legislative authority in a city or county;
- (16) "Increment bonds" means bonds and notes issued for the purpose of paying the costs of one (1) or more projects, or grant or loan programs as described in subsection (30)(c) of this section, in a development area or a local development area;
- (17) "Incremental revenues" means the amount of revenues received by a taxing district, as determined by subtracting old revenues from new revenues in a calendar year with respect to a development area, a project within a development area, or a local development area;
- (18) "Issuer" means a city, county, or agency issuing increment bonds;
- (19) "Local development area" means a development area established under KRS 65.7047;

- (20) "Local development area agreement" means an agreement entered into under KRS 65.7047;
- (21) "Local participation agreement" means the agreement entered into under KRS 65.7063;
- (22) "Local tax revenues" means:
  - (a) Revenues derived by a city or county from one (1) or more of the following sources:
    - 1. Real property ad valorem taxes;
    - 2. Occupational license taxes, excluding occupational license taxes that have already been pledged to support an economic development project within the development area; and
    - 3. The occupational license fee permitted by KRS 65.7056; and
  - (b) Revenues derived by any taxing district other than school districts or fire districts from real property ad valorem taxes;
- (23) "Low-income household" means a household in which gross income is no more than two hundred percent (200%) of the poverty guidelines updated periodically in the Federal Register by the United States Department of Health and Human Services under the authority of 42 U.S.C. sec. 9902(2);
- (24) "Mixed-use" has the same meaning as in KRS 154.30-060;
- (25) "New revenues" means the amount of local tax revenues received by a taxing district with respect to a development area or a local development area in any calendar year beginning with the year in which the activation date occurred;
- (26) "Old revenues" means the amount of local tax revenues received by a taxing district with respect to a development area or a local development area during the last calendar year prior to the commencement date. If the governing body determines that the amount of local tax revenues received during the last calendar year prior to the commencement date does not represent a true and accurate depiction of revenues, the governing body may consider revenues for a period of no longer than three (3) calendar years prior to the commencement date, so as to determine a fair representation of local tax revenues;
- (27) "Outstanding" means increment bonds that have been issued, delivered, and paid for by the purchaser, except any of the following:
  - (a) Increment bonds canceled upon surrender, exchange, or transfer, or upon payment or redemption;
  - (b) Increment bonds in replacement of which or in exchange for which other increment bonds have been issued; or
  - (c) Increment bonds for the payment, redemption, or purchase for cancellation prior to maturity, of which sufficient moneys or investments, in accordance with the ordinance or other proceedings or any applicable law, by mandatory sinking fund redemption requirements, or otherwise, have been deposited, and credited in a sinking fund or with a trustee or paying or escrow agent, whether at or prior to their maturity or redemption, and, in the case of increment bonds

to be redeemed prior to their stated maturity, notice of redemption has been given or satisfactory arrangements have been made for giving notice of that redemption, or waiver of that notice by or on behalf of the affected bond holders has been filed with the issuer or its agent;

- (28) "Planning unit" means a planning commission established pursuant to KRS Chapter 100;
- (29) "Project" means any property, asset, or improvement located in a development area or a local development area and certified by the governing body as:
  - (a) Being for a public purpose; and
  - (b) Being for the development of facilities for residential, commercial, industrial, public, recreational, or other uses, or for open space, including the development, rehabilitation, renovation, installation, improvement, enlargement, or extension of real estate and buildings; and
  - (c) Contributing to economic development or tourism;
- (30) "Redevelopment assistance," as utilized within a development area, includes the following:
  - (a) Technical assistance programs to provide information and guidance to existing, new, and potential businesses and residences;
  - (b) Programs to market and promote the development area and attract new businesses and residents;
  - (c) Grant and loan programs to encourage the construction or rehabilitation of residential, commercial, and industrial buildings; improve the appearance of building facades and signage; and stimulate business start-ups and expansions;
  - (d) Programs to obtain a reduced interest rate, down payment, or other improved terms for loans made by private, for-profit, or nonprofit lenders to encourage the construction or rehabilitation of residential, commercial, and industrial buildings; improve the appearance of building facades and signage; and stimulate business start-ups and expansions;
  - (e) Local capital improvements, including but not limited to the installation, construction, or reconstruction of streets, lighting, pedestrian amenities, public utilities, public transportation facilities, public parking, parks, playgrounds, recreational facilities, and public buildings and facilities;
  - (f) Improved or increased provision of public services, including but not limited to police or security patrols, solid waste management, and street cleaning;
  - (g) Provision of technical, financial, or other assistance in connection with:
    - 1. Applications to the Energy and Environment Cabinet for a brownfields assessment or a No Further Remediation Letter issued pursuant to KRS 224.1-450; or
    - 2. Site remediation by means of the Voluntary Environmental Remediation Program to remove environmental contamination in the development area, or lots or parcels within it, pursuant to KRS 224.1-510 to 224.1-532; and

- (h) Direct development by a city, county, or agency of real property acquired by the city, county, or agency. Direct development may include one (1) or more of the following:
1. Assembly and replatting of lots or parcels;
  2. Rehabilitation of existing structures and improvements;
  3. Demolition of structures and improvements and construction of new structures and improvements;
  4. Programs of temporary or permanent relocation assistance for businesses and residents;
  5. The sale, lease, donation, or other permanent or temporary transfer of real property to public agencies, persons, and entities both for profit and nonprofit; and
  6. The acquisition and construction of projects;
- (31) "Service payment agreement" means an agreement between a city, county, or issuer of increment bonds or other obligations and any person, whereby the person agrees to guarantee the receipt of incremental revenues, or the payment of debt charges, or any portion thereof, on increment bonds or other obligations issued by the city, county, or issuer;
- (32) "Special fund" means a special fund created under KRS 65.7061 in which all incremental revenues shall be deposited;
- (33) "Taxing district" means any city, county, or special taxing district other than school districts and fire districts;
- (34) "Tax incentive agreement" means an agreement entered into under KRS 154.30-070;
- (35) "Termination date" means:
- (a) For a development area, a date established by the ordinance creating the development area that is no more than twenty (20) years from the establishment date. If a tax incentive agreement for a project within a development area or a local participation agreement relating to the development area has a termination date that is later than the termination date established in the ordinance, the termination date for the development area shall be extended to the termination date of the tax incentive agreement, or local participation agreement. However, the termination date for the development area shall in no event be more than forty (40) years from the establishment date;
  - (b) For a local development area, a date established by the ordinance creating the local development area that is no more than twenty (20) years from the establishment date, provided that if a local development area agreement relating to the local development area has a termination date that is later than the termination date established in the ordinance, the termination date for the local development area shall be extended to the termination date of the local development area agreement;

- (c) For a local participation agreement, a date that is no more than twenty (20) years from the activation date. However, the termination date for a local participation agreement shall in no event be more than forty (40) years from the establishment date of the development area to which the local participation agreement relates; and
- (d) For a local development area agreement, a date that is no more than twenty (20) years from the activation date. However, the termination date for a local development area agreement shall in no event be more than forty (40) years from the establishment date of the local development area to which the development area agreement relates; and

✓(36) "University research park" means land owned by a public university that has been designated by the public university as being primarily for the development of projects and facilities to support high-tech, pharmaceutical, laboratory, and other research-based businesses, including projects and facilities to support and complement the development of high-tech, pharmaceutical, laboratory, and other research-based businesses.

**Effective:** June 8, 2011

**History:** Amended 2011 Ky. Acts ch. 62, sec. 2, effective June 8, 2011. -- Amended 2010 Ky. Acts ch. 24, sec. 58, effective July 15, 2010. -- Amended 2009 (1st Extra. Sess.) Ky. Acts ch. 1, sec. 57, effective June 26, 2009. -- Amended 2008 Ky. Acts ch. 178, sec. 2, effective July 15, 2008. -- Created 2007 Ky. Acts ch. 95, sec. 3, effective March 23, 2007.



**65.7049 Establishment of development area for investment, reinvestment, development, use, and reuse pursuant to this section and KRS 65.7051 and 65.7053 -- Conditions for establishment -- Findings required.**

Any city or county may establish a development area pursuant to this section, KRS 65.7051, and 65.7053 to encourage investment and reinvestment in and development, use, and reuse of areas of the city or county under the following conditions:

- (1) The area shall be contiguous and shall be no more than three (3) square miles;
- (2) The establishment or expansion of the development area shall not cause the assessed value of taxable real property within all development areas and local development areas of the city or county establishing the development area to exceed twenty percent (20%) of the assessed value of all taxable real property within its jurisdiction. For the purpose of determining whether the twenty percent (20%) threshold has been met, the assessed value of taxable real property within all of the development areas and local development areas shall be valued as of the establishment date;
- (3) The governing body of the city or county shall determine that the development area either:
  - (a) Has two (2) or more of the following conditions:
    1. Substantial loss of residential, commercial, or industrial activity or use;
    2. Forty percent (40%) or more of the households are low-income households;
    3. More than fifty percent (50%) of residential, commercial, or industrial structures are deteriorating or deteriorated;
    4. Substantial abandonment of residential, commercial, or industrial structures;
    5. Substantial presence of environmentally contaminated land;
    6. Inadequate public improvements or substantial deterioration in public infrastructure; or
    7. Any combination of factors that substantially impairs or arrests the growth and economic development of the city or county; impedes the provision of adequate housing; impedes the development of commercial or industrial property; or adversely affects public health, safety, or general welfare due to the development area's present condition and use; or
  - (b) The project is a mixed-use development:
    - ✓ 1. Located in a university research park;
    2. Located within three (3) miles of a military base that houses, deploys, or employs any combination of at least twenty-five thousand (25,000) military personnel, their families, military retirees, or civilian employees; or
    3. The project is a mixed-use development which includes either or both significant public storm water and sanitary sewer facilities designed to

comply with a community-wide court decree mandating corrective action by the local government or an agency thereof; and

- (4) The governing body of the city or county shall find that all of the following are true for projects meeting the requirements of paragraph (a) of subsection (3) of this section:
- (a) That the development area is not reasonably expected to be developed without public assistance. This finding shall be supported by specific reasons and supporting facts, including a clear demonstration of the financial need for public assistance; and
  - (b) That the public benefits of the development area justify the public costs proposed. This finding shall be supported by specific data and figures demonstrating that the projected benefits outweigh the anticipated costs and shall take into account the positive and negative effects of investment in the development on existing businesses and residents within the community as a whole; and
  - (c)
    - 1. That the area immediately surrounding the development area has not been subject to growth and development through investment by private enterprise; or
    - 2. If the area immediately surrounding the development area has been subject to growth and development through investment by private enterprise, the identification of special circumstances within the development area that would prevent its development without public assistance.

**Effective:** June 25, 2013

**History:** Amended 2013 Ky. Acts ch. 99, sec. 2, effective June 25, 2013. -- Amended 2011 Ky. Acts ch. 62, sec. 3, effective June 8, 2011. -- Amended 2009 (1st Extra. Sess.) Ky. Acts ch. 1, sec. 58, effective June 26, 2009. -- Created 2007 Ky. Acts ch. 95, sec. 5, effective March 23, 2007.

LOUISIANA



PART X. STIMULUS TO ECONOMIC AND

EDUCATIONAL DEVELOPMENT

SUBPART A. RESEARCH PARK CORPORATION

§3396. Purpose

The Louisiana Legislature recognizes that economic development can be fostered by the encouragement of advanced technologies and better employment opportunities and that Louisiana must promote research and economic development opportunities through the encouragement of high technology. The legislature therefor authorizes the establishment of the Research Park Corporation as a public, nonprofit corporation authorized to create, develop, construct, operate, manage, and finance a research and development park in cooperation with the Board of Supervisors of Louisiana State University and Agricultural and Mechanical College, the Board of Supervisors of Southern University and Agricultural and Mechanical College, and the governing authority of the appropriate municipality or parish.

Acts 1992, No. 882, §1; Acts 1995, No. 912, §2, eff. June 28, 1995.

§3396.1. Construction of part; supplemental and additional nature

This Part shall be deemed to provide a complete, additional, and alternative method for doing the things authorized hereby and shall be regarded as supplemental and additional to powers conferred by other laws.

Acts 1992, No. 882, §1.

§3396.2. Definition of corporation

As used in this Part, unless the context clearly indicates or requires other or different meaning or intent, the word "corporation" shall mean the nonprofit corporation authorized to be formed by this Part or any corporation succeeding to the principal functions thereof or to which the powers conferred upon the corporation by this Part. It is further declared that any such corporation shall not constitute an instrumentality of the state, a state agency, board, or commission, or a political subdivision.

Acts 1992, No. 882, §1.

§3396.3. Functions of corporation

A. There is hereby authorized the formation and incorporation of a public nonprofit corporation to be known as the "Research Park Corporation". Said corporation shall have its principal place of business in the appropriate municipality or parish.

B. The purpose and functions of the corporation shall be as follows:

- (1) To promote the development of high technology industries and research in Louisiana.
- (2) To create, develop, construct, operate, manage, and finance research and development parks.

- (3) To increase opportunities for employment in Louisiana.
- (4) To promote research and development in Louisiana.
- (5) To promote cooperation between the public and the private sector with respect to research and development.
- (6) To promote and assist institutions of higher education under the management of the Board of Supervisors of Louisiana State University and Agricultural and Mechanical College and the Board of Supervisors of Southern University and Agricultural and Mechanical College in the field of research and development.
- (7) To promote and assist the governing authority of the appropriate municipality or parish to encourage research and development, to increase opportunities for employment, and to attract high technology industries in such area.
- (8) To attract nationally prominent scientists and researchers to the appropriate municipality or parish, to Louisiana, and to Louisiana State University and Agricultural and Mechanical College and Southern University and Agricultural and Mechanical College.
- (9) To maximize the research capabilities of the state.

Acts 1992, No. 882, §1.

§3396.4. Membership of board of directors; vacancies; compensation; expenses; executive committee

A. The corporation shall be managed by a board of directors consisting of not less than nine and not more than twelve members. The following individuals shall serve on the board of directors:

- (1) The designee of the mayor-president of the city of Baton Rouge and the parish of East Baton Rouge.
- (2) The designee of the president of the Louisiana State University system.
- (3) The designee of the president of the Southern University System.
- (4) The designee of the secretary of the Department of Economic Development.
- (5) One member selected by the Economic Freedom Association.

(6) In addition, the board members designated in Paragraphs (1) through (5) of this Subsection shall elect at least four but not more than seven individuals to represent the business sector to serve on the board of directors. Any vacancy occurring among the elected members shall be filled in accordance with the bylaws of the corporation.

B. Board members serving by virtue of their appointive or elected offices shall serve during the time that they are elected or appointed to their respective offices. Initial terms of the elected members designated in Paragraph (A)(6) of this Section shall be three years. Elected members may succeed themselves if reelected.

C. Members of the board of directors shall serve without compensation, but the corporation may reimburse such members, or the institutions which they represent, for necessary expenses incurred in

the discharge of their duties if such compensation does not violate any other provision of law to the contrary.

D.(1)(a) For the prompt and efficient transaction of business, the bylaws established pursuant to R.S. 17:3396.5(6) may provide for an executive committee of the board of directors and allot to such committee all functions and powers of the board, subject to the general direction and control of the board and the provisions of this Section.

(b) The committee shall consist of seven members of the board of directors, as follows:

(i) Chairman of the board.

(ii) Vice chairman of the board.

(iii) Secretary of the board.

(iv) Treasurer of the board.

(v) Three additional members of the board, elected as provided in the bylaws of the board to one year terms. Such members shall be eligible for reelection to subsequent terms.

(c) The members shall record the proceedings of each meeting of the executive committee.

(2) A majority of the members of the executive committee shall constitute a quorum for the transaction of business and a majority of a quorum shall be required to take action. However, when the board has delegated to the committee full power to act to bind the board with respect to a matter, affirmative action by a majority of the entire committee membership shall be required.

(3) The executive committee shall meet at the call of the board chairman.

(4)(a) The executive committee shall:

(i) Consider such matters as are delegated or referred to it by the board.

(ii) Execute such orders and resolutions as shall be assigned to it at any meeting of the board.

(iii) Take such action as necessary when an emergency requiring immediate action arises during the interim between board meetings.

(b) All acts of the executive committee shall be submitted to the board for ratification or rejection at its next meeting except acts on which the board has delegated to the executive committee full power to act to bind the board.

(c) The provisions of R.S. 17:3396.8 shall apply to the actions of the executive committee in the same manner and to the same extent as it does to the board.

Acts 1992, No. 882, §1; Acts 1995, No. 294, §1; Acts 2002, 1st Ex. Sess., No. 21, §1, eff. April 18, 2002; Acts 2003, No. 995, §1, eff. July 2, 2003; Acts 2008, No. 419, §1.

§3396.5. Powers

In addition to the powers granted it by the Nonprofit Corporation Law, as provided in Chapter 2 of Title 12 of the Louisiana Revised Statutes of 1950, the corporation shall have the following powers and authorities:

- (1) To acquire, purchase, hold, use, improve, lease, mortgage, sell, transfer, and dispose of any property, real, personal, or mixed, or any interest therein.
- (2) To receive and accept from any agency of the United States or any agency of the state of Louisiana or any municipality, parish, or other political subdivision thereof, or from any individual, association, or corporation, gifts, grants, or donations of monies or other property for achieving any of the purposes of this Part, and to invest and disperse funds of the corporation.
- (3) To create, develop, construct, operate, manage, and finance research and development parks, related facilities, and infrastructure.
- (4) To receive and accept from any source loans, contributions, or grants for or in aid of any purpose of the corporation, or the financing thereof in either money, property, labor, or other things of value.
- (5) From time to time to borrow money and incur debt.
- (6) To make bylaws for the management and regulation of its affairs.
- (7) To make and enter into contracts and to execute all instruments necessary or convenient for the carrying out of business.
- (8) To make and enter into cooperative endeavor agreements with the United States, or its agencies, or with any public or private association, corporation, or individual.
- (9) To delegate authority to any agent or establish any committee in order to accomplish the purposes of the corporation.
- (10) To mortgage, pledge, hypothecate, or otherwise encumber the property, real, personal, or mixed, or facilities, or revenues of the corporation as security for notes, evidences of indebtedness, or other obligations of the corporation and to assign or pledge all or any portion of its interest in property, corporeal or incorporeal, and the revenues therefrom.
- (11) To maintain an inventory of research efforts in Louisiana.
- (12) To attract investments in research and development and high technology industries by focusing attention on various educational, cultural, scientific, and economic activities in Louisiana and by assisting potential investors with information requested to determine whether to invest in Louisiana.
- (13) To hire an executive director or president, who shall be an employee of the corporation, to manage the day to day affairs of the corporation.

Acts 1992, No. 882, §1.

§3396.6. Liability of board members



No member of the board of directors of the corporation shall be liable personally for any indebtedness issued by the corporation or be subject to any personal liability or accountability by reason of the issuance thereof.

Acts 1992, No. 882, §1.

§3396.7. Debt or liability

No evidence of debt issued by the corporation shall be deemed to constitute a debt, liability, or obligation of the state, a state agency, or any political subdivision thereof.

Acts 1992, No. 882, §1.

§3396.8. Applicability of other laws

A. Except as otherwise provided in this Section, the corporation shall be subject to the Public Records Law, the Open Meetings Law, and the Code of Governmental Ethics. Until thirty days prior to the date the board of directors is scheduled to consummate a final sale or lease of any immovable property owned by the corporation, the board may meet in executive session to discuss negotiations between the corporation and any prospective vendor or lessee of that property. R.S. 44:31 through 35 shall not apply to any records related to the negotiations of or to the terms of such a sale or lease until thirty days prior to the date the board of directors is scheduled to consummate a final sale or lease. The board shall give written public notice of its intention to consummate a final sale or lease at least thirty days prior to the date on which the board intends to take such action. This notice shall comply with the procedural provisions of R.S. 42:19. ✓

B. The corporation shall issue a report to the public annually specifying the number of prospects managed, the Standard Industrial Classification (SIC) Code, the number of location contracts finalized, the number of prospects still active and the negotiations status, and the number of negotiations terminated and the reasons for termination.

C. Notwithstanding any other provision of this Part to the contrary, that portion of the documents evidencing proprietary information or trade secrets of either the corporation or the prospective vendee or lessee shall not be subject to the Public Records Law for any reason whatsoever. ✓

Acts 1992, No. 882, §1.

§3396.9. Dissolution of corporation

Upon dissolution of the corporation, all of the funds, property, both movable and immovable, and both tangible or intangible, assets, interests, rights, and all other property whatsoever, shall become owned by and shall inure to the benefit of the state.

Acts 1992, No. 882, §1.



MARYLAND





Kathy Tenopir &lt;ktenopir@leg.ne.gov&gt;

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## Response to Innovation Campuses

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Baker, Sara Jean &lt;SaraJean.Baker@mlis.state.md.us&gt;

Tue, Jun 23, 2015 at 12:35 PM

To: "ktenopir@leg.ne.gov" &lt;ktenopir@leg.ne.gov&gt;

Cc: "Fidler, Sara" &lt;Sara.Fidler@mlis.state.md.us&gt;

Hi Kathy,

Below is the response to your questions re: higher education and research and technology parks in Maryland.

1. Is one or more of your state-supported institutions of higher education affiliated with a Research and Technology Park? If yes, please name the institution(s) and the Research and Technology Park.

Yes, at three of the State's research institutions:  
University of Maryland, Baltimore – BioPark  
University of Maryland, College Park – MSquare  
University of Maryland Baltimore County – bwtech@UMBC

Is the Research and Technology Park a non-profit 501(C)3 entity?

All three are non-profits.

3. Have State General Funds been provided for the general operation of the Research and Technology Park e.g. staff, operating and maintenance costs?

No.

4. Have State General Funds been provided for capital construction projects associated with the facilities at the Research and Technology Park? If yes, were State General Funds contingent upon receiving private funds?

The BioPark received \$4 million from the Sunny Day investment fund (a non-lapsing revolving fund comprised of general funds and funds from the payments of loans); of the \$4 million, \$1 million was a grant and the remaining \$3 million was a loan. The funds were used to subsidize biotech companies to fit out research space. ✓

5. Has your State established tax-preferential zones on college or university campuses for the development of new start-up business or for the expansion of joint public/private research ventures, etc.?

No.

Sara Baker

Senior Policy Analyst  
Department of Legislative Services  
State Circle  
Annapolis, MD 21401  
410-946-5530/301-970-5530



MICHIGAN





M1



Kathy Tenopir &lt;ktenopir@leg.ne.gov&gt;

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**FW: [educ-I] Innovation Campuses**

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Emily Workman <eworkman@ecs.org>  
To: Kathy Tenopir <ktenopir@leg.ne.gov>

Wed, Jun 17, 2015 at 4:11 PM

Hi Kathy,

A response below.

**Emily Workman**

Information Clearinghouse Manager

Policy Analyst

Education Commission of the States

700 Broadway, Suite 810

Denver, Colorado 80203-8442

303-299-3655



ECS was created by states, for states, in 1965. We track policy, translate research, provide unbiased advice and create opportunities for state policymakers to learn from one another.

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From: Bill Bowerman [mailto:BBowerman@senate.michigan.gov]  
Sent: Wednesday, June 17, 2015 2:17 PM  
To: Emily Workman  
Subject: RE: [educ-I] Innovation Campuses

Some links that will provide information:

<http://urcmich.org/>

<http://www.wmich.edu/wmu/news/2005/09/055.html>

You can contact the University Research Corridor at (517) 999-4007 about funding. I have only done Higher Ed here for going on 5 years. Also, the URC probably received funding from Economic Development budgets, and not directly in the Higher Education budget.

Hope the above helps.

**From:** Emily Workman [mailto:[eworkman@ecs.org](mailto:eworkman@ecs.org)]  
**Sent:** Wednesday, June 17, 2015 2:29 PM  
**To:** Bill Bowerman  
**Subject:** [educ-I] Innovation Campuses

Good afternoon!

Your colleague from Nebraska has posed the following questions for the group. Don't be alarmed by the number – some require only yes/no answers! Please send responses directly to Kathy Tenopir at [ktenopir@leg.ne.gov](mailto:ktenopir@leg.ne.gov).

1. Is one or more of your state-supported institutions of higher education affiliated with a Research and Technology Park? If yes, please name the institution(s) and the Research and Technology Park.
2. Is the Research and Technology Park a non-profit 501(C)3 entity?
3. Have State General Funds been provided for the general operation of the Research and Technology Park e.g. staff, operating and maintenance costs?
4. Have State General Funds been provided for capital construction projects associated with the facilities at the Research and Technology Park? If yes, were State General Funds contingent upon receiving private funds?
5. Has your State established tax-preferential zones on college or university campuses for the development of new start-up business or for the expansion of joint public/private research ventures, etc.?

Thanks,

Emily

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Michigan's University Research Corridor (URC) is the engine that drives innovation for Michigan and the Great Lakes region, increasing economic prosperity and connecting Michigan to the world.

# *Partnerships*

## **Michigan Bloodspot Environmental Epidemiology Project (BLEEP)**

To generate insights into the impact of prenatal environmental exposure on adverse health outcomes, the BLEEP research team has leveraged a \$450,000 award from the URC to support 12 early stage epidemiological research projects.

## *Profiles*

URC PROFILE

**Steelcase**

Jennifer McVey  
Grand Rapids

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**Michigan  
State University**

**University  
of Michigan**

**Wayne State**

# University

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## WMU joins Michigan's Core Technology Alliance

Sept. 30, 2005

KALAMAZOO--Western Michigan University has become the newest member of a consortium working to enhance life sciences research and product development across Michigan.

The Core Technology Alliance officially welcomed WMU into its ranks Sept. 22, after encouraging the University to apply for membership. WMU's membership in the CTA means its Biological Imaging Center and Biosciences Research and Commercialization Center will be added to the alliance's roster of core technology facilities.

By providing access to such advanced technologies, the CTA is serving as a catalyst for the development of life sciences and biotechnology research. It makes its technology facilities available to Michigan researchers affiliated with universities, private research institutes and biotechnology or pharmaceutical firms.

With the support of the Michigan Economic Development Corp., the CTA was founded in 1999 by four members of the Michigan's Tri-Technology Corridor: Michigan's three other research universities--Michigan State University, the University of Michigan and Wayne State University--and the Van Andel Research Institute in Grand Rapids.

WMU President Judith I. Bailey notes that being invited to join the CTA is another example of the University's growing stature as one of Michigan's four research universities.

"We were approached to join," Bailey says. "The invitation is recognition of our unique strengths as a research university and a valued partner in the research fabric of Michigan. We're honored to be a member."

Bailey also notes that CTA membership will be a boon to WMU scientists.

"Each member brings a series of different core technologies forward," she says. "Membership will grow our research portfolio by offering opportunities for our research faculty to access these specialized technologies. And we'll be partners with the CTA for new equipment renewal funding for our core technology facilities."

WMU is one of three entities in the CTA to have more than one core technology represented in the alliance.

The Biological Imaging Center, which is housed in the Department of Biological Sciences, provides several high-tech functions. In addition to being a resource for scientists across campus who need electron microscope and image analysis, it also conducts research and medical analysis for industry around the nation as well as local hospitals.

The Biosciences Research and Commercialization Center, a commercially focused and science-driven translational research center, already is a major player in Michigan's economic development. It is successfully using its pharmaceutical expertise and resources to commercialize promising life sciences discoveries and to expand Michigan's life sciences business sector.

The CTA's other core technology facilities are: the Michigan Center for Biological Information and the Michigan Proteome Consortium at U of M; the Michigan High Throughput Screening Center at Kalamazoo Valley Community College; the Michigan Center for Structural Biology at MSU; the Michigan Animal Models Consortium at the Van Andel Institute; the Michigan Center for Genomic Technologies at WSU; and the Michigan Antibody Technology Core, which has facilities at both U of M and the Van Andel Institute.

**Media contact:** Cheryl Roland, (269) 387-8400,  
[cheryl.roland@wmich.edu](mailto:cheryl.roland@wmich.edu)

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MISSOURI



# Missouri Revised Statutes

## Chapter 172

### State University--University of Missouri

←172.270

#### Section 172.273.1

172.280→

August 28, 2014

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**Research, development and office park projects established, when--procedure--curators' powers--real property exempt from zoning, ordinances and property tax--permits, licenses and certificates may be issued, when, application of sovereign and official immunity and public duty doctrines.**

172.273. 1. The curators of the University of Missouri may establish research, development and office park projects, in order to promote cooperative relationships and to provide for shared resources between private individuals, companies and corporations, and the University of Missouri, for the advancement of the university in carrying out its educational mission and such projects are declared to be in furtherance of the purposes of the university.

2. The curators may, in connection with such projects, enter into written, mutually binding leases or agreements with individuals, businesses, corporations, and professional firms participating in the project for the purpose of expanding business and professional opportunities for students, faculty and graduates of the university and of the area it serves, and for making available to the university the resources and expertise of the business and professional entities participating in the project.

3. The curators may purchase necessary land and may purchase and construct or arrange for or permit the construction of any necessary facilities for such projects, may utilize the power of eminent domain, and may in any other manner acquire and accept in the name of the curators of the University of Missouri suitable land and facilities for such projects, and may enter into business arrangements, including long-term leases, for the development thereof. The curators may also acquire options upon lands to be purchased. Lands and improvements utilized as a part of such projects, so long as they remain a part of a project, shall not be subject to local zoning or local regulatory ordinances; provided that if the project is located within a city or county, the university is required to consult with the city or county, prior to board of curators' approval of the master development plan or substantial amendments thereto. The city or county plan commission may hold and complete a public hearing on such plan within forty-five days of submission to the city or county and the city or county within fifteen days thereafter may issue its advisory recommendations to the curators. The curators may in their sole discretion require that project development conform to the planning, transportation, environmental, health and safety requirements of such city or county. Interests in property included in such projects may be conveyed as needed, without passage of a concurrent resolution as provided by the provisions of section 172.020. The utilization of the real property, as provided in subsection 1 of this section, is hereby deemed to be a public purpose and in furtherance of the purposes of the university. Provided such land is owned by the university, no

leasehold or other interest therein, by whomsoever held, shall be separately assessed or taxed, and such real property as a whole shall be deemed the property of the curators of the University of Missouri and be exempt from all forms of property tax.

4. For the purpose of developing and operating the project, the curators may enter into cooperative agreements, including leases, in the same manner and to the same extent that political subdivisions are authorized to enter into such agreements by the provisions of section 70.220.

5. Whenever the curators' acquisition of land for such a research, development and office park project will result in displacement, relocation assistance and monetary benefits identical to those provided by subchapter II of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, 42 U.S.C. 4621 et seq., and its implementing regulations shall be afforded to each displaced occupant or entity.

6. Notwithstanding the exemption of the curators of the University of Missouri from municipal regulation and the provisions of subsection 3 of this section, any entity acting pursuant to a lease or cooperative agreement with the curators may request that permits, licenses and certificates be issued by a city or county where a project is to be located in order to aid in the construction, operation and financing of such project. Such permits, licenses and certificates may be issued by the city or county after review and approval of plans submitted by an architect or engineer licensed to practice in the state of Missouri. Any entity may also request that inspections be conducted by such city or county if such activities are normally performed by the city or county in the enforcement of its building code.

7. Such doctrines of sovereign and official immunity and the public duty doctrines as now exist for the issuance of permits, licenses, certificates and performance of inspections shall apply to any city, county or official or employee thereof issuing permits, licenses, and certificates or performing inspections pursuant thereto with respect to any claim brought for damages as a result of the wrongful or negligent issuance of such permit, license or certificate or the performance of inspections.

8. The exemption from assessment and taxation provided by subsection 3 of this section for leaseholds in property owned by the university in a research park project shall not be available for leases entered into from and after August 28, 1996. Notwithstanding the foregoing and any provision of this section to the contrary, all leaseholds in property in such parks leased by the university to tenants for research, development, office or any other nonrecreational use prior to August 28, 1996, including leaseholds created after August 28, 1996, under options or similar rights which were granted prior to January 1, 1996, shall be exempt from assessment and taxation for the term of such lease, provided that leaseholds in property used for recreational purposes shall be subject to assessment and taxation as determined by the assessor of the local political subdivision, and all lands and improvements in such parks, by whomsoever owned.

(L. 1986 S.B. 657 § 1, A.L. 1988 H.B. 1456 merged with S.B. 820, A.L. 1996 H.B. 1237)

(2000) Exemption from property tax of leasehold interests in research, development and office park projects leased by University of Missouri violates article X, section 6 of the Missouri Constitution. *St. Charles County v. Curators of the University of Missouri*, 25 S.W.3d 159 (Mo.banc).

(2003) Property formerly exempted by section declared unconstitutional were omitted properties under section 138.380 and could also be assessed for taxes for the year in which the decision declaring the section unconstitutional was issued. *Nike IHM, Inc. v. Zimmerman*, 122 S.W.3d 615 (Mo.App.E.D.).

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Missouri General Assembly

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NEVADA





Kathy Tenopir &lt;ktenopir@leg.ne.gov&gt;

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**FW: [educ-I] Innovation Campuses**

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Butterworth, Todd &lt;Todd.Butterworth@lcb.state.nv.us&gt;

Thu, Jun 18, 2015 at 10:24 AM

To: "ktenopir@leg.ne.gov" &lt;ktenopir@leg.ne.gov&gt;

See the responses from Nevada, embedded in the email below.

All the best,

**Todd M. Butterworth**

Senior Research Analyst

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**From:** Emily Workman [mailto:eworkman@ecs.org]

**Sent:** Wednesday, June 17, 2015 11:29 AM

**To:** Butterworth, Todd

**Subject:** [educ-I] Innovation Campuses

Good afternoon!

Your colleague from Nebraska has posed the following questions for the group. Don't be alarmed by the number – some require only yes/no answers! Please send responses directly to Kathy Tenopir at ktenopir@leg.ne.gov.

1. Is one or more of your state-supported institutions of higher education affiliated with a Research and Technology Park? If yes, please name the institution(s) and the Research and Technology Park.

The Harry Reid Research and Technology Park (HRRTP) in Las Vegas is associated with UNLV.

Desert Research Institute (DRI) in Reno is a stand-alone research institution of the Nevada System of Higher Education. I am not sure if DRI is considered a Research and Technology Park, so I will provide its information, in case it is helpful to you.

2. Is the Research and Technology Park a non-profit 501(C)3 entity?

The owner of the HRRTP is the nonprofit UNLV Research Foundation.

DRI is a State higher education institution.

3. Have State General Funds been provided for the general operation of the Research and Technology Park e.g. staff, operating and maintenance costs?

HRRTP— Not so far. The HRRTP is a relatively new endeavor and I am aware of only one company and one charter school that have agreed to build at the park.

DRI— As a State institution, about \$7 million of DRI's annual operating budget comes from the State General Fund.

4. Have State General Funds been provided for capital construction projects associated with the facilities at the Research and Technology Park? If yes, were State General Funds contingent upon receiving private funds?

HRRTP—No State funds have been provided to-date.

DRI— Yes. Over the past many years about 6% of DRI's capital project money has come from the General Fund, 61% from bond issues, and 33% from private donations. I believe some of the General Fund money was contingent upon private donations being received.

5. Has your State established tax-preferential zones on college or university campuses for the development of new start-up business or for the expansion of joint public/private research ventures, etc.?

HRRTP— No, however State economic development policy allows for certain tax breaks and abatements when companies locate in Nevada.

DRI— Ditto

It may be worth noting that Nevada recently approved a tax abatement package totaling \$1.5 billion to attract the Tesla Gigafactory to a massive business park being developed near Reno.

Thanks,

Emily

**Emily Workman**

Information Clearinghouse Manager

Policy Analyst

Education Commission of the States

700 Broadway, Suite 810

Denver, Colorado 80203-8442

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NEW MEXICO



MM

N. M. S. A. 1978, § 21-28-1

Chapter 21, Article 28 NMSA 1978 may be cited as the "University Research Park and Economic Development Act".

N. M. S. A. 1978, § 21-28-2  
§ 21-28-2. Research park; purpose

The purpose of the University Research Park and Economic Development Act is to:

- A. promote the public welfare and prosperity of the people of New Mexico;
- B. foster economic development within New Mexico;
- C. forge links between New Mexico's educational institutions, business and industrial communities and government through the development of research parks on university real property; or
- D. engage in other cooperative ventures of innovative technological significance that will advance education, science, research, conservation, health care or economic development within New Mexico.

N. M. S. A. 1978, § 21-28-3

§ 21-28-3. Definitions

As used in the University Research Park and Economic Development Act:

- A. "bond" or "bonds" means any bond, note or other evidence of indebtedness;
- B. "regents" means:
  - (1) in the case of an educational institution named in Article 12, Section 11 of the constitution of New Mexico, the board of regents of the institution;
  - (2) in the case of a community college, the community college board; or
  - (3) in the case of a technical and vocational institute, the governing board of the technical and vocational institute district;
- C. "research park" means research and development facilities, research institutes, testing laboratories, buildings, offices, light manufacturing, utility facilities, health care facilities, related businesses, government installations and similar facilities, including land and projects for the development of real property; all necessary appurtenances; and rights and franchises acquired, constructed, managed and developed by a university or under its authority that are suitable or necessary to promote the social welfare of New Mexico through the advancement of education, science, research, conservation, health care, economic development and related purposes regardless of whether the activities conducted in those facilities are directly related to research;
- D. "research park corporation" means any corporation formed pursuant to the provisions of the University Research Park and Economic Development Act;
- E. "technological innovations" means research, development, prototype assembly, manufacture, patenting, licensing, marketing and sale of inventions, ideas, practices, applications, processes, machines, technology and related property rights of all kinds; and
- F. "university" means:
  - (1) a New Mexico educational institution named in Article 12, Section 11 of the constitution of New Mexico;
  - (2) a community college organized pursuant to the Community College Act;<sup>1</sup> or
  - (3) a technical and vocational institute organized pursuant to the Technical and Vocational Institute Act.<sup>2</sup>

N. M. S. A. 1978, § 21-28-4

§ 21-28-4. Research park corporations; authorization; members; terms; meetings; bylaws

- A. Any university may form, pursuant to the provisions of the Nonprofit Corporation Act<sup>1</sup> or the Business Corporation Act,<sup>2</sup> one or more research park corporations, separate and apart from the state and the university, to promote, develop and administer research parks or technological innovations for scientific, educational and economic development opportunities in accordance with bylaws adopted by the research park corporation or economic development initiatives that support the teaching, research or service mission of the university.
- B. Each research park corporation shall be governed by, and all of its functions, powers and duties shall be exercised by, a board of directors appointed by the regents. Members of the board of directors may include the president of the university, the regents, officers and employees of the university and other persons selected by the regents.
- C. The board of directors shall elect a chair and other officers as the board of directors deems necessary.

D. The board of directors shall adopt bylaws, in accordance with the provisions of the Nonprofit Corporation Act or the Business Corporation Act, as appropriate, governing the conduct of the research park corporation in the performance of its duties under the University Research Park and Economic Development Act.

N. M. S. A. 1978, § 21-28-5

§ 21-28-5. Powers of university as related to research parks

A. The regents of each university shall have the power to implement and further the purposes of the University Research Park and Economic Development Act, including the power:

- (1) to establish, acquire, develop, maintain and operate research parks, including all necessary or suitable buildings, facilities and improvements, and to acquire, purchase, construct, improve, remodel, add to, extend, maintain, equip and furnish research parks or any building or facility, including research and service facilities and areas intended for the common use of research park tenants;
- (2) to form research park corporations to aid and assist the university to acquire, construct, finance, operate and manage research parks;
- (3) to form research park corporations to engage in economic development activities that support the teaching, research and service mission of the university, including creating learning opportunities for the students of the university;
- (4) to lease, sell, exchange or transfer to research park corporations personal property, money and all or part of the land and facilities included in a research park, on terms and conditions established by the regents that are fair, just and reasonable to the university, and to enter into any other contract or agreement with the research park corporation for the construction, financing, operation and management of the research park;
- (5) to lease, either directly or through a research park corporation, to any person, firm, partnership, government entity or any other lawful entity recognized under the laws of the state, any part or all of the land, buildings and facilities of the research park under guidelines established by the regents;
- (6) to allow a lessee, exchanger or purchaser of university land to acquire or construct necessary or suitable buildings, facilities and improvements upon university land; provided that any improvements acquired or constructed upon university land during the term of any lease of university land shall revert to and become the property of the university on termination of the lease or any renewal or extension;
- (7) to construct buildings, facilities and improvements and to acquire, purchase, construct, improve, remodel, add to, extend, maintain, equip and furnish research parks or any building or facility, including research and service facilities and areas intended for common use of research park occupants;
- (8) to finance all or part of the costs of the research park, including the purchase, construction, reconstruction, improvement, remodeling, addition to, extension, maintenance, equipment and furnishing;
- (9) to conduct, sponsor, finance and contract in connection with technological innovations of all kinds; and
- (10) to do anything else that the regents deem appropriate to further the purposes of the University Research Park and Economic Development Act either directly or indirectly.

B. The specification of powers in this section is not exclusive and shall not be construed to impair or negate any other power or authority enjoyed by the regents under the constitution or laws of this state.

N. M. S. A. 1978, § 21-28-6

§ 21-28-6. Powers of research park corporation

A research park corporation shall have all the powers necessary and convenient to carry out and effectuate the provisions of the University Research Park and Economic Development Act, including the power to:

- A. approve or disapprove proposals;
- B. sue and be sued in its corporate name;
- C. purchase, take, receive or otherwise acquire; own, hold, manage, develop, dispose of or use; and otherwise deal in and with property, including an interest in or ownership of intangible personal property, intellectual property or technological innovations;
- D. sell, convey, pledge, exchange, transfer, lease or otherwise dispose of its assets and properties for consideration upon terms and conditions that the corporation shall determine; provided that any sale, conveyance, pledge, exchange, transfer, lease or disposal of a real property interest by a research park corporation shall be made in accordance with the provisions of Section 13-6-2 NMSA 1978;
- E. make contracts, incur liabilities or borrow money at rates of interest that the research park corporation may determine;
- F. make and execute all contracts, agreements or instruments necessary or convenient in the exercise of the powers and functions of the corporation granted by the University Research Park and Economic Development Act;
- G. receive and administer grants, contracts and private gifts;
- H. invest and reinvest its funds;
- I. conduct its activities, carry on its operations, have offices and exercise the powers granted by the University Research Park and Economic Development Act;



- J. make and alter bylaws that may contain provisions indemnifying any person who is or was a director, officer, employee or agent of the corporation and that are consistent with the University Research Park and Economic Development Act, for the administration and regulation of the affairs of research park corporations;
- K. employ officers and employees that it deems necessary, set their compensation and prescribe their duties;
- L. enter into agreements with insurance carriers to insure against any loss in connection with its operations;
- M. authorize retirement programs and other benefits for salaried officers and employees of the research park corporation;
- N. employ fiscal consultants, attorneys and other consultants that may be required and to fix and pay their compensation; and
- O. enter into license agreements and contracts, including those involving intellectual property and technological innovations such as patents, copyrights, franchises and trademarks.

N. M. S. A. 1978, § 21-28-7

#### § 21-28-7. Limitations on application of laws

- A. A research park corporation shall not be deemed an agency, public body or other political subdivision of New Mexico, including for purposes of applying statutes and laws relating to personnel, procurement of goods and services, meetings of the board of directors, gross receipts tax, disposition or acquisition of property, capital outlays, per diem and mileage and inspection of records.
- B. A research park corporation shall be deemed an agency or other political subdivision of the state for purposes of applying statutes and laws relating to the furnishing of goods and services to the university that operates it and the risk management fund.
- C. A research park corporation, its officers, directors and employees shall be granted immunity from liability for any tort as provided in the Tort Claims Act.<sup>1</sup> A research park corporation may enter into agreements with insurance carriers to insure against a loss in connection with its operations even though the loss may be included among losses covered by the risk management fund of New Mexico.

N. M. S. A. 1978, § 21-28-8

#### § 21-28-8. Issuance of revenue bonds

A research park corporation may issue negotiable revenue bonds or notes or both. The proceeds of the sale of bonds issued pursuant to the University Research Park and Economic Development Act shall be used to carry out the provisions of that act and to fund reserves for the research park corporation to pay interest on the bonds and to pay the necessary expenses of issuing the bonds, including bond counsel and fiscal adviser fees and other legal, consulting and printing fees and costs. All bonds may be issued in one or more series. The bonds of each issue shall be dated and bear interest as prescribed by the research park corporation. The bonds shall mature serially or otherwise not later than forty years from their date and may be redeemable before maturity at the option of the research park corporation at prices and under terms and conditions fixed by the research park corporation in its resolution or trust agreement providing for issuance of the bonds. The resolution or trust agreement shall also determine the form of the bonds, including the form of any interest coupons to be attached thereto, and shall fix the denominations of the bonds and the place of the payment of the principal and interest thereon. The bonds shall be executed on behalf of the research park corporation as special obligations of the research park corporation payable only from the funds specified in the University Research Park and Economic Development Act and shall not be a debt of this state, any political subdivision of this state or any university, and neither this state nor any political subdivision nor university shall be liable for the debts of the research park corporation. The resolution or trust agreement may provide for registration of the bonds as to ownership and for successive conversion and reconversion from registered to bearer bonds and vice versa. The bonds may be registered in the principal office of the research park corporation. After the registration and delivery to the purchasers, the bonds are incontestable and constitute special obligations of the research park corporation, and the bonds and coupons are negotiable instruments under the laws of this state. The bonds may be sold at public or private sale by the research park corporation at prices and in accordance with procedures and terms the research park corporation determines to be advantageous and reasonably obtainable. The research park corporation may provide for replacement of any bond that may be mutilated or destroyed.

N. M. S. A. 1978, § 21-28-9

#### § 21-28-9. Status of bonds

Bonds and other obligations issued under the provisions of the University Research Park and Economic Development Act shall be deemed issued on behalf of the university, but shall not be deemed to constitute a debt, liability, obligation or a pledge of the faith and credit of this state or any political subdivision thereof or any university, but shall be payable solely from the revenue or assets of the research park corporation pledged for that payment. Each obligation issued on behalf of the research park corporation under the University Research Park and Economic Development Act shall contain on its face a statement to the effect that neither this state nor any political subdivision, university or research park corporation shall be obligated to pay the same or the interest thereon except from the revenues or assets pledged therefor and that neither the faith and credit nor the taxing power of this state, any political subdivision thereof or any university is pledged to the payment of the principal of or the interest on such obligation.

N. M. S. A. 1978, § 21-28-10

#### § 21-28-10. Refunding bonds

The board of directors of a research park corporation may by resolution provide for the issuance of refunding bonds to refund any outstanding bonds issued under the University Research Park and Economic Development Act, together with redemption premiums, if any, and interest accrued or to accrue thereon. Provisions governing the issuance and sale of bonds under the University Research Park and Economic Development Act govern the issuance and sale of refunding bonds insofar as applicable. Refunding bonds may be exchanged for the outstanding bonds or may be sold and the proceeds used to retire the outstanding bonds. Pending the application of the proceeds of any refunding bonds, with any other available funds, to the payment of the principal, interest and any redemption premiums on the bonds being refunded, and if so provided or permitted in the resolution of the research park corporation authorizing the issuance of such refunding bonds, to the payment of any interest on refunding bonds and any expenses incurred in connection with refunding, the proceeds may be placed in escrow and invested in securities that are unconditionally guaranteed by the United States and that shall mature or be subject to redemption by the holders thereof, at the option of the holders, not later than the respective dates when the proceeds, together with the interest accruing thereon, will be required for the purposes intended.

N. M. S. A. 1978, § 21-28-11

#### § 21-28-11. Trust agreements authorized

In the discretion of the research park corporation, any bonds issued under the provisions of the University Research Park and Economic Development Act may be secured by a trust agreement by and between the research park corporation and a corporate trustee, which may be a bank or trust company having trust powers within or without the state. The trust agreement or the resolution providing for the issuance of bonds may pledge or assign all or any part of the revenues or assets of the research park corporation. The trust agreement or resolution may contain provisions for protecting and enforcing the rights and remedies of the holders of any bonds as may be reasonable and proper and not in violation of law, including covenants setting forth the duties of the research park corporation in relation to the purposes to which bond proceeds may be applied, the disposition or pledging of the revenues or assets of the research park corporation and the custody, safeguarding and application of all money. It is lawful for any bank or trust company incorporated under the laws of the state that may act as depository of the proceeds of bond revenues or other money hereunder to furnish indemnifying bonds or to pledge securities that may be required by the research park corporation. Any trust agreement or resolution may set forth the rights and remedies of the holders of any bonds and of the trustee and may restrict the individual right of action by any holders. In addition, any trust agreement or resolution may contain other provisions as the research park corporation may deem reasonable and proper for the security of the holders of any bonds. All expenses incurred in carrying out the provisions of a trust agreement or resolution may be paid from the revenues or assets pledged or assigned to the payment of the principal of and the interest on bonds or from any other funds available to the research park corporation.

N. M. S. A. 1978, § 21-28-12

#### § 21-28-12. Pledge of assets or revenues of research park corporation

The pledge of any assets or revenues of the research park corporation to the payment of the principal of or the interest on any bonds shall be valid and binding from the time when the pledge is made, and any such assets or revenues shall immediately be subject to the lien of such pledge without any physical delivery thereof or further act, and the lien of any pledge shall be valid and binding as against all parties having claims of any kind in tort, contract or otherwise against the research park corporation, irrespective of whether such parties have notice thereof. Nothing in this section shall be construed to prohibit the research park corporation from selling any assets subject to any such pledge except to the extent that any such sale may be restricted by the trust agreement or resolution providing for the issuance of such bonds.

N. M. S. A. 1978, § 21-28-13

#### § 21-28-13. All money received from sale of bonds deemed trust funds

All money received by a research park corporation from bonds issued under the provisions of the University Research Park and Economic Development Act shall be deemed funds to be held in trust, applied as provided in that act or transferred to other research park corporations, nonprofit corporations or the university as the research park corporation deems appropriate. The resolution authorizing any obligations or the trust agreement securing the obligations may provide that any of the money covered by this section may be temporarily invested pending its disbursement. The resolution shall provide that any officer with whom, or any bank or trust company with which, the money is deposited shall act as trustee of the money and shall hold and apply the money for the purposes of the University Research Park and Economic Development Act, subject to provisions that rules under that act and the resolution or trust agreement may specify. Any such money described in this section received by a research park corporation may be invested as provided in the University Research Park and Economic Development Act.

N. M. S. A. 1978, § 21-28-14

#### § 21-28-14. Limitation of liability

The members of the board of directors of a research park corporation, while acting within the scope of their authority, and any person acting in their behalf, while acting within the scope of the person's authority, shall not be personally liable for the corporation's obligations.

M. S. A. 1978, § 21-28-15

#### § 21-28-15. Rights of holders of bonds

Any holder of bonds issued under the provisions of the University Research Park and Economic Development Act or any coupons appertaining thereto, and the trustee under any trust agreement or resolution authorizing the issuance of those bonds, except as the rights given pursuant to that act may be restricted by a trust agreement or resolution, may, either at law or in equity, by suit, mandamus or other proceeding, protect and enforce any and all rights under the laws of this state or granted by that act or under the trust agreement or resolution or under any other contract executed by the research park corporation pursuant to that act, and may enforce and compel the performance of all duties required by that act or by the trust agreement or resolution to be performed by the research park corporation or by any officer thereof.

... Goes through 21-28-25

#### § 21-28-25. Transfer of technology developed by universities; officer or employee interest in private entity

A. Notwithstanding any other provision of state law, an officer or employee of a university may, subject to Subsection B of this section, apply to the university which, under policies established by the regents as provided in Subsection E of this section, may grant permission to establish and maintain a substantial interest in a research park corporation or private entity which provides or receives equipment, material, supplies or services in connection with the university or a research park corporation in order to facilitate the transfer of technology developed by the officer or employee of the university from the university to commercial and industrial enterprises for economic development.

B. To receive the permission pursuant to Subsection A of this section, the officer or employee must receive the approval of the president or his designee of the university at which he is employed. The president of the university may grant approval to the officer or employee only if all of the following conditions are met:

- (1) the officer or employee provides a detailed description of his interest in the research park corporation or private entity to the president;
- (2) the nature of the proposed undertaking is fully described to the president;
- (3) the officer or employee demonstrates to the satisfaction of the president that the proposed undertaking may benefit the economy of this state;
- (4) the officer or employee demonstrates to the satisfaction of the president that the proposed undertaking will not adversely affect research, public service or instructional activities at the university; and
- (5) the officer's or employee's interest in the research park corporation or private entity or benefit from the interest will not adversely affect any substantial state interest.

C. The president of a university may authorize an officer or employee of the university to establish and maintain a substantial interest in a research park corporation or private entity if all of the following conditions are met:

(1) the application to maintain the substantial interest is approved by the president of the university at which the officer or employee is employed;

(2) the application contains a detailed description of the officer's or employee's interest in the research park corporation or private entity;

(3) the application contains a detailed description of the proposed undertaking;

(4) the application demonstrates to the satisfaction of the president of the university that the proposed undertaking will benefit the economy of this state;

(5) the application demonstrates to the satisfaction of the president of the university that the proposed undertaking will not adversely affect research, public service or instructional activities at the university; and

(6) the officer's or employee's interests in the research park corporation or private entity or benefit from the interest will not adversely affect any substantial state interest.

D. On recommendation of the regents, the president of the university at which the officer or employee is employed may require that the university or a research park corporation have a share in any royalties or shares of the research park corporation or other proceeds or equity positions from the proposed undertaking of the private entity.

E. The regents may establish policies for the implementation of this section.

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OFFICIAL COMPILATION OF CODES, RULES AND REGULATIONS OF THE STATE OF NEW YORK

TITLE 5. DEPARTMENT OF ECONOMIC DEVELOPMENT

CHAPTER XXII. START-UP NY PROGRAM

PART 220. SUNY TAX-FREE AREAS TO REVITALIZE AND TRANSFORM UPSTATE NEW YORK (START-UP NY) PROGRAM

5 CRR-NY 220.1

5 CRR-NY 220.1

220.1 Purpose and general description.

(a) The purpose of these regulations is to establish procedures and guidelines for the SUNY tax free areas to revitalize and transform upstate New York Program ("START-UP NY Program") established by article 21 of the Economic Development Law (EDL). Pursuant to sections 435 and 436 of the EDL, the Commissioner of Economic Development is authorized to promulgate regulations to establish, among other things:

- (1) a process for the submission and approval of plans to designate tax-free NY areas;
- (2) the eligibility criteria that will be applied in evaluating those plans;
- (3) a process for the evaluation and possible rejection of applications by businesses desiring to participate in the START-UP NY Program;
- (4) eligibility criteria that will be applied in evaluating those applications;
- (5) a process for terminating a business from the START-UP NY Program; and
- (6) a process for administrative appeals of such terminations.

(b) The START-UP NY Program is intended to promote entrepreneurialism and job creation by transforming higher education to create tax-free communities across the State, particularly in upstate New York, to attract high-tech and other start-ups, venture capital, new business and investments from across the world. The START-UP NY Program is intended to help companies, especially high-tech and start-up businesses, to start, grow and stay in New York.

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220.2 Definitions.

As used in this regulation, the following terms shall have the following meanings:

(a) *Academic mission* means any official academic mission announced and adopted by any university or college seeking approval as a sponsor of a designated tax-free NY area. Such academic mission may consider, among other things, the institution's comprehensive undergraduate, graduate education and/or professional education curriculum; research; leadership role in the community; diversity and culture; regional economic development; internship and training opportunities; direct job opportunities for graduates; international outreach; specific area specialization within the university or college; and any other factors which the university or college deems to be appropriate in defining academic mission for purposes of the START-UP NY Program.

(b) *Affiliated* means connected, related, or associated with.

(c) *Application* means a submission from an eligible business for approval to participate in the START-UP NY Program.

(d) *Bona fide affiliation* means a relationship between a New York State incubator or a hot spot sponsored or administered by a university or college, documented by a certificate of incorporation, by-laws, memorandum of understanding or similar document detailing the relationship between the parties and the rights, responsibilities and expectations of the parties, including but not limited to financial commitments, shared use of staff, facilities or resources.

(e) *Business in the formative stage* means a company in the start-up or early stage of development with a product, service, software, or research that is not yet in the commercial marketplace, but which can show continued and steady maturity towards commercialization and profitability either by product development, external funding or product sales.

(f) *Campus* means any real property in New York State owned or leased by a university or college, held in trust for a university or college, or owned or leased by an affiliated not-for-profit entity on behalf of a university or college or for the benefit of a university or college, and can include any such additional real property acquired, established, operated or contracted to be operated for or on behalf of the university or college. Real property owned or leased by a not-for-profit entity on behalf of a university or college or for the benefit of a university or college must be utilized by the university or college in furtherance of any stated academic mission of that university or college.

(g) *City University* or *CUNY* means the City University of New York as described in section 6202(2) of the Education Law, including each senior college and each community college.

(h) *Commissioner* means the Commissioner of Economic Development.

(i) *Community* means the census tract or tracts containing an approved tax-free NY area and the census tracts immediately contiguous to such census tract or tracts.

(j) *Community college* means a college established pursuant to the provisions of article 126 of the Education Law, and providing two-year or four-year post-secondary programs in general and technical educational subjects and receiving financial assistance from the State other than a community college of CUNY.

(k) *Competitor* means a business that produces, manufactures, or sells the same or substantially similar product or provides the same services, and competes for the same customers or clients as an applicant for the START-UP NY Program.



- (l) *College* means a not-for-profit educational institution given the power to confer associate, baccalaureate or higher degrees in this State by the Legislature or under the Education Law.
- (m) *Contract* can mean any agreement, including but not limited to a subcontract, lease, grant, bond, or covenant between two or more entities.
- (n) *Correctional facility* shall have the same meaning as defined in section 431 of the EDL, and designation of which shall be provided in accordance with section 435 of the EDL.
- (o) *Department* means the New York State Department of Economic Development.
- (p) *Directly adjacent* means next to, adjoining or sharing a common border or boundary.
- (q) *Downstate New York* means Nassau, Suffolk, and Westchester counties, and the counties of New York City (New York, Queens, Kings, Richmond, and Bronx).
- (r) *Economically distressed community* means a community identified as having such criteria indicative of economic distress, including but not limited to rates of poverty, receipt of public assistance, or unemployment as the commissioner deems appropriate to demonstrate that a community is in need of economic assistance.
- (s) *EDL* means the Economic Development Law.
- (t) *Eligible land* means vacant land or space that is eligible for designation as a tax-free NY area.
- (u) *High tech business* means a business engaged in the design, development, and introduction of new biotechnology, information technology, remanufacturing, advanced materials, processing, engineering or electronic technology products and/or innovative manufacturing processes, and meet such other requirements for a high-tech business as the commissioner shall develop.
- (v) *Incubator graduate* means a business which has been certified as having successfully completed residency in a New York State incubator or innovation hot spot after having met the milestone or benchmark requirements established by the incubator or hot spot management for business growth including such factors as growth in employment, sales, profitability and physical space.
- (w) *Lease* means any contract or agreement that provides terms and conditions for occupancy of land or space.
- (x) *Local economic development entity* means a public agency or affiliated not-for-profit corporation including, but not limited to, an economic development or industrial development agency, local development corporation, local planning or development council, and all other such entities concerned with the economic development of the municipality or county within which the tax-free NY area is designated or is proposed for designation.
- (y) *Municipality* means a city, town or village for all counties excluding those of Bronx, Kings, New York, Queens and Richmond counties. For the counties of Bronx, Kings, New York, Queens and Richmond, *municipality* means the City of New York.
- (z) *A net new job* means a job created by a business participating in the START-UP NY Program during its period of certification in a tax-free NY area that satisfies all of the following criteria:

(1) is new to the State;

(2) has not been transferred from employment with another business located in this State, through an acquisition, merger, consolidation or other reorganization of businesses or the acquisition of assets of another business, or except as provided in section 431(6)(d) of the EDL and section 220.6(c) of this Part, has not been transferred from employment with a related person in this State;

(3) is not filled by an individual employed within the State within the immediately preceding 60 months by a related person;

(4) is either a full-time wage-paying job or equivalent to a full-time wage-paying job requiring at least 35 hours per week; and

(5) is located in a tax-free NY area and filled for more than six months during each year for which the tax benefits are being granted.

(aa) *A new business* means a business that satisfies the following conditions:

(1) the business must not be operating or located within the State as of the date it submits its application to participate in the START-UP NY Program;

(2) the business must not be moving existing jobs into the tax-free NY area from another area in the State;

(3) the business is not substantially similar in operation and in ownership to a business entity (or entities) taxable, or previously taxable within the last five taxable years, under section 183, 184, 185 or 186 of the Tax Law; article 9-A, 32 or 33 of the Tax Law; article 23 of the Tax Law or which would have been subject to tax under article 23 of the Tax Law (as such article was in effect on January 1, 1980), or the income or losses of which is or was includable under article 22 of the Tax Law; and

(4) the business must not have caused individuals to transfer from existing employment with a related person located in the State to similar employment with the business, unless such business has received approval for such transfers from the commissioner after demonstrating that the related person has not eliminated those existing positions.

(ab) *New York State incubator or incubator* means a business incubator program which also provides physical space that has been designated according to the requirements of section 16-v of the Urban Development Corporation Act.

(ac) *New York State innovation hot spot or hot spot* means an incubator that has been designated as a hot spot according to the requirements of section 16-v of the Urban Development Corporation Act.

(ad) *Plan* means a submission from eligible colleges or universities for approval of eligible land or vacant space for designation as a tax-free NY area pursuant to section 220.7, 220.8, or 220.9 of this Part.

(ae) *Private university or college* means a not-for-profit two- or four-year university or college given the power to confer associate, baccalaureate or higher degrees in this State by the Legislature or by the Regents under article 5 of the Education Law.

(af) *Program* means the START-UP NY Program, unless otherwise indicated.

(ag) A *related person* means a *related person* as defined in 26 U.S.C. section 465(b)(3)(C). At the time of this rulemaking, the Internal Revenue Service has interpreted related person to include the following:

(1) members of a family, but only an individual's brothers and sisters, half-brothers and half-sisters, a spouse, ancestors (parents, grandparents, etc.), and lineal descendants (children, grandchildren, etc.);

(2) two corporations that are members of the same controlled group of corporations determined by applying a 10 percent ownership test;

(3) the fiduciaries of two different trusts, or the fiduciary and beneficiary of two different trusts, if the same person is the grantor of both trusts;

(4) a tax-exempt educational or charitable organization and a person who directly or indirectly controls it (or a member of whose family controls it);

(5) a corporation and an individual who owns directly or indirectly more than 10 percent of the value of the outstanding stock of the corporation;

(6) a trust fiduciary and a corporation of which more than 10 percent in value of the outstanding stock is owned directly or indirectly by or for the trust or by or for the grantor of the trust;

(7) the grantor and fiduciary, or the fiduciary and beneficiary, of any trust;

(8) a corporation and a partnership if the same persons own over 10 percent in value of the outstanding stock of the corporation and more than 10 percent of the capital interest or the profits interest in the partnership;

(9) two S corporations if the same persons own more than 10 percent in value of the outstanding stock of each corporation;

(10) an S corporation and a regular corporation if the same persons own more than 10 percent in value of the outstanding stock of each corporation;

(11) a partnership and a person who owns directly or indirectly more than 10 percent of the capital or profits of the partnership;

(12) two partnerships if the same persons directly or indirectly own more than 10 percent of the capital or profits of each;

(13) two persons who are engaged in business under common control;

(14) an executor of an estate and a beneficiary of that estate.

(ah) A *sponsor* or *sponsoring university or college* means a university or college that has received approval to sponsor a tax-free NY area or is affiliated with a strategic State asset as designated by the START-UP NY Approval Board pursuant to section 220.5, 220.7, 220.8, or 220.9 of this Part.

(ai) The *START-UP NY Approval Board* or *board* means a board consisting of three members, one each appointed by the Governor, the Speaker of the Assembly and the temporary President of the Senate. Each member of the START-UP NY Approval Board must have significant expertise and experience in

academic-based economic development and may not have a personal interest in any project that comes before the board.

(aj) *START-UP NY airport facility* means vacant land or space owned by the State of New York on the premises of Stewart Airport or Republic Airport.

(ak) *State University* or *SUNY* means the State University of New York as described in section 352 of the Education Law.

(al) *Strategic State asset* means land or a building or group of buildings owned by the State of New York that is closed, vacant, or for which notice of closure has been given pursuant to any statutory notice requirement or which is otherwise authorized to be closed pursuant to any chapter of the laws of New York.

(am) *Tax-free NY area* means the land or vacant space of a university or college and designated area of a New York State incubator that meets the eligibility criteria specified in article 21 of the EDL and has been approved as a tax-free NY area pursuant to section 220.5, 220.7, 220.8, or 220.9 of this Part. It also means a strategic State asset that has been approved by the START-UP NY Approval Board.

(an) An *underutilized property* means vacant or abandoned land or space in an existing industrial park, manufacturing facility, a brownfield site as defined in article 27 of the Environmental Conservation Law, or a distressed or abandoned property, which shall be determined by factors including poverty, identified by the county or the town, village or city that contains such distressed or abandoned property, as of June 20, 2013. A university or college shall work with local municipalities or local economic development entities to identify underutilized properties.

(ao) *University* means a not-for-profit educational institution given the power to confer associate, baccalaureate or higher degrees in this State by the Legislature or under the Education Law.

(ap) *Upstate New York* means all counties in New York State except Nassau, Suffolk, and Westchester counties, and the counties of New York City (New York, Queens, Kings, Richmond and Bronx).

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220.3 Role of the commissioner.

(a) The commissioner reviews and approves all plans for approval of eligible land or vacant space as a tax-free NY area from SUNY, CUNY, and community colleges that wish to become a sponsor, except those required by section 435 of the EDL to be reviewed by the START-UP NY Approval Board. As part of this review and approval process, the commissioner can consider any information available, including all information submitted by the sponsor applicants.

(b) The commissioner reviews all business applications and may reject any applications from businesses that wish to locate onto an approved tax-free NY area and participate in the program. As part of this review process, the commissioner can consider any information available, including all information submitted by the business.

(c) The commissioner tracks and reports on Statewide eligible space available for approval as a tax-free NY area and for purposes of tracking and managing, among other things, the aggregate amount of tax-free NY areas and aggregate number of net new jobs approved for personal income tax benefits.

(d) The commissioner tracks and reports on the number of plans for approval as a tax-free NY area and applications from businesses for approval to participate in the START-UP NY Program.

(e) The commissioner tracks and reports on the number of eligible employees for the personal income tax benefit and permitted under the program.

(f) The commissioner receives, reviews and acts on reports on businesses participating in the program regarding, among other things, new job creation and other eligibility criteria.

(g) The commissioner reviews and may remove any business from the program that fails to meet the eligibility requirement of article 21 of the New York State Economic Development Law or any of the requirements herein.

(h) The commissioner submits reports as required by article 21 of the EDL and any of the requirements herein.

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220.4 START-UP NY Approval Board.

(a) Each member of the START-UP NY Approval Board shall be entitled to designate a representative to attend meetings of the board in his or her place, and to vote or otherwise act on his or her behalf in his or her absence. Notice of such designation shall be furnished in writing to the board by the designating member. A representative shall serve at the pleasure of the designating member. A representative shall not be authorized to delegate any of his or her duties or functions to any other person.

(b) The board is responsible for the review and approval of plans for approval as a tax-free NY area from private universities and colleges that wish to become a sponsor. The board also reviews and approves plans submitted by certain SUNY, CUNY, or community college campuses seeking designation of tax-free NY areas as described in section 220.5 of this Part.

(c) The board, by majority vote, shall also designate as tax-free NY areas up to 20 strategic State assets, in addition to certain START-UP NY airport facilities and correctional facilities, as defined in section 220.2 of this Part. Each strategic State asset, START-UP NY airport facility, and correctional facility shall be affiliated with a SUNY, CUNY, community college, or private university or college and such designation shall require the support of the affiliated university or college. Each strategic State asset and START-UP NY airport facility may not exceed a maximum of 200,000 square feet of vacant land or vacant building space designated as a tax-free NY area.

(d) In addition, the board may approve:

(1) one plan that includes eligible land owned or leased by a CUNY that is directly adjacent to a CUNY campus;

(2) one plan that includes eligible land owned or leased by a SUNY, community college, or private university or college in Nassau County or Suffolk County that is directly adjacent to such college's or university's campus; and

(3) one plan that includes eligible land owned or leased by a SUNY, community college, or private university or college in Westchester County that is directly adjacent to such college's or university's campus. The board may approve an additional plan, for a SUNY, community college, or private university or college in Nassau or Suffolk County not previously approved, in which case it shall also approve a second plan for eligible land or space not previously approved for a CUNY.

(e) The board shall endeavor to meet not less than quarterly to review, evaluate and vote on plans.

(f) Board members and their designees shall disclose to the board any personal, business, or financial interest in:

(1) a sponsor; or

(2) a business that is participating in the program or has applied to participate in the program. A board member, or designated representative, shall recuse himself or herself from evaluating or voting on any plan where a personal, business, or financial interest might reasonably tend to conflict with the proper discharge of his or her duties or otherwise create the appearance of a conflict of interest. Where practicable, a board member who has recused himself or herself shall designate a representative to attend meetings of the board and vote or otherwise act in his or her place.

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220.5 Eligibility criteria for designation as a tax-free NY area.

Only certain land and buildings located on the campuses of a SUNY or CUNY, community colleges, certain properties of private colleges and universities, certain properties outside the campuses of a SUNY or CUNY, community college or private colleges or universities, designated New York State incubators, strategic State assets, START-UP NY airport facilities, and correctional facilities, as defined in section 220.2 of this Part, shall be eligible for designation as a tax-free NY area.

(a) For SUNY and community college campuses in upstate New York, excluding all Empire State College campuses except for the Empire State College campus in Saratoga Springs:

(1) Any vacant space in any building located on campus shall be eligible for designation as a tax-free NY area.

(2) Any vacant land on campus shall be eligible for designation as a tax-free NY area.

(3) Up to a total of 200,000 square feet of vacant land or vacant building space located within one mile of a perimeter of a SUNY or community college campus shall be eligible for designation as a tax-free NY area.

(i) Upon application from such SUNY or community college and in consultation with the chancellor or his or her designee, the commissioner may qualify identified vacant land or identified vacant space in a building that is located more than one mile from its campus as eligible for purposes of this program if the commissioner determines that the SUNY or community college has shown that the use of the land or space will be consistent with the requirements of this program.

(4) A New York State incubator with a bona fide affiliation to the SUNY or community college—which therefore must involve a partnership to provide assistance and physical space to eligible businesses towards the goals of jointly creating jobs and incubating new startup businesses, and which must be aligned with or furthering the academic mission of the SUNY or community college—shall be eligible for designation as a tax-free NY area.

(5) No academic programs, administrative programs, offices, housing facilities, dining facilities, athletic facilities, or any other facility, space or program that actively serves students, faculty or staff may be closed or relocated in order to create vacant land or space to be utilized for the program.

(b) For SUNY and community college campuses in Nassau, Suffolk, or Westchester Counties:

(1) any vacant space in any building located on campus shall be eligible for designation as a tax-free NY area;

(2) any vacant land on campus shall be eligible for designation as a tax-free NY area;

(3) a New York State incubator with a bona fide affiliation to the SUNY or community college shall be eligible for designation as a tax-free NY area;

(4) plans may be submitted to the START-UP Approval Board for designation of eligible lands directly adjacent to the campus as tax-free NY area, described in section 220.4(d) of this Part;

(5) no academic programs, administrative programs, offices, housing facilities, dining facilities, athletic facilities, or any other facility, space or program that actively serves students, faculty or staff may be closed or relocated in order to create vacant land or space to be utilized for this program.

(c) For SUNY and community college campuses in New York City:

(1) any vacant land or vacant building space on campus property that is located in upstate New York shall be eligible for designation as a tax-free NY area;

(2) any property affiliated with Downstate Medical Center that constitutes a New York State incubator shall be eligible for designation as a tax-free NY area;

(3) for SUNY and community colleges in New York City with campus property in upstate New York, up to 200,000 square feet of vacant land or building space located within one mile of a perimeter of a SUNY or community college campus property that is in upstate New York shall be eligible for designation as a tax-free NY area;

(i) upon application from such SUNY or community college and in consultation with the chancellor or his or her designee, the commissioner may qualify identified vacant land or identified vacant space in a building that is located more than one mile from its campus as eligible for purposes of this program if the commissioner determines that the SUNY or community college has shown that the use of the land or space will be consistent with the requirements of this program.

(4) a New York State incubator with a bona fide affiliation with a New York City-based state university or community college shall be eligible for designation as a tax-free NY area; and

(5) Downstate Medical Center, Fashion Institute of Technology (FIT), Maritime College and College of Optometry are eligible to seek designation of additional tax-free NY space by the START-UP NY Approval Board as described in section 220.4(d) of this Part and subdivision (f) of this section;

(6) no academic programs, administrative programs, offices, housing facilities, dining facilities, athletic facilities, or any other facility, space or program that actively serves students, faculty or staff may be closed or relocated in order to create vacant land or space to be utilized for this program.

(d) For CUNY campuses:

(1) up to five CUNY campuses, one each in the boroughs of Manhattan, Brooklyn, Bronx, Queens and Staten Island, may be designated by the board of trustees of the CUNY in economically distressed communities as defined by the commissioner;

(i) any vacant space in any building located on a designated campus shall be eligible for designation as a tax-free NY area;

(ii) any vacant land on a designated campus shall be eligible for designation;

(2) any vacant land or vacant building space on property of a CUNY campus that is located in upstate New York shall be eligible for designation;

(3) a New York State incubator with a bona fide affiliation to the CUNY shall be eligible for designation as a tax-free NY area;

(4) CUNY campuses not otherwise designated are eligible to seek designation of tax-free NY space by the START-UP NY Approval Board as described in section 220.4(d) of this Part and subdivision (f) of this section;

(5) up to a total of 200,000 square feet of vacant land or vacant building space located within one mile of a perimeter of a CUNY campus in upstate NY shall be eligible for designation as a tax-free NY area;

(i) upon application from such CUNY and in consultation with the chancellor or his or her designee, the commissioner may qualify identified vacant land or identified vacant space in a building that is located more than one mile from its campus as eligible for purposes of this program if the commissioner determines that the SUNY or community college has shown that the use of the land or space will be consistent with the requirements of this program;

(6) no academic programs, administrative programs, offices, housing facilities, dining facilities, athletic facilities, or any other facility, space or program that actively serves students, faculty or staff may be closed or relocated in order to create vacant land or space to be utilized for this program.



(e) For private colleges and universities in upstate New York:

(1) up to 2.4 million square feet of vacant space in any building or vacant land in upstate New York shall be eligible for designation as a tax-free NY area;

(2) a New York State incubator with a bona fide affiliation to the private university or college shall be eligible for designation as a tax-free NY area and are subject to the limitation on eligible square footage in this section.

(f) For private colleges and universities in downstate New York:

(1) private colleges and universities in downstate New York are eligible—along with Downstate Medical Center, Fashion Institute of Technology (FIT), Maritime College, College of Optometry and campuses of CUNY not otherwise designated—to apply to the START-UP NY Approval Board for designation of up to 75,000 square feet of vacant campus land or space as a tax-free NY area in each of the following eight counties: Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, and Westchester. In any county where the allocated 75,000 square feet is designated as a tax-free NY area, an additional 75,000 square feet shall be eligible for designation by the START-UP NY Approval Board as a tax-free NY area;

(2) a New York State incubator with a bona fide affiliation to the private university or college shall be eligible for designation as a tax-free NY area;

(3) private colleges or universities located in Nassau, Suffolk or Westchester Counties are eligible to apply for designation by the START-UP NY Approval Board of certain adjacent property as tax-free NY area, described in section 220.4(d) of this Part.

(g) For strategic State assets, START-UP NY airport facilities, and correctional facilities:

(1) the START-UP NY Approval Board may also approve plans that include up to 20 strategic State assets affiliated with a SUNY, CUNY, or community college, or with a private college or university;

(2) each strategic State asset approved by the board may include up to 200,000 square feet of vacant land or vacant building space designated as a tax-free NY area and shall not count against any other square footage limitations in the program.

(3) The START-UP NY Approval Board may also approve plans that include correctional facilities, as defined in section 220.2 of this Part, affiliated with a SUNY, CUNY or community college, or with a private college or university.

(4) THE START-UP NY Approval Board may also approve plans that includes START-UP NY airport facilities, as defined in section 220.2 of this Part, affiliated with a SUNY, CUNY or community college, or with a private college or university. Each START-UP NY airport facility included in a plan approved by the START-UP NY Approval Board shall not exceed 200,000 square feet of vacant land or vacant building space.

(h) For a New York State incubator:

(1) for purposes of this Part, only certain land and buildings within certified New York State incubators with a bona fide affiliation with a sponsoring university or college shall be eligible to participate in START-UP NY;

(2) in order for there to be a bona fide affiliation of a New York State incubator with a sponsoring university or college, the incubator and the sponsoring university or college must have a partnership to provide assistance and physical space to eligible businesses, as described in section 16-v of the Urban Development Corporation Act;

(3) in the case of a business incubator or hot spot sponsored or administered by a university or college, the incubator or hot spot shall document the relationship with the university or college by providing the certificate of incorporation, by-laws, memorandum of understanding or similar document detailing the relationship between the parties;

(4) in the case of a business incubator or hot spot that is part of a partnership with another university or college or a not-for-profit entity other than the sponsoring or administering entity, the incubator or hot spot shall provide evidence of such partnership agreement through submission of a memorandum of understanding, certificate of incorporation, by-laws or similar document detailing the rights, responsibilities and expectations of the parties, including but not limited to financial commitments, shared use of staff, facilities or resources;

(5) the incubator and the sponsoring university or college must directly work together towards the goals of jointly creating jobs and incubating new startup businesses;

(6) the mission and activities of the incubator must align with or further the academic mission of the sponsor.

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220.6 Eligibility criteria for businesses.

(a) For purposes of this section, only eligible businesses located on eligible land shall be eligible to participate in the START-UP NY Program.

(b) The commissioner may seek and consider any information required to assess a business's eligibility in the START-UP NY Program.

(1) The following types of businesses are prohibited from participating in the START-UP NY Program:

(i) Retail and wholesale businesses. Retail businesses shall include establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. Wholesale businesses shall include establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. Merchandise includes the outputs of agriculture, mining, manufacturing, and certain information industries, such as publishing.

(ii) Restaurants. Restaurants shall include establishments that prepare meals, snacks, and beverages to customer order for immediate on-premises and off-premises consumption. This includes establishments that provide food and drink only, or various combinations of seating space, waiter/waitress services and incidental amenities, such as limited entertainment.

(iii) Real estate brokers. Real estate brokers shall include establishments that are engaged in renting or leasing real estate to others; selling, buying, or renting real estate for others; and providing other real estate related services, such as appraisal services.

(iv) Law firms or businesses providing legal services. Law firms or businesses providing legal services shall include establishments or offices of legal practitioners known as lawyers or attorneys (*i.e.*, counselors-at-law) primarily engaged in the practice of law. Establishments in this industry may provide expertise in a range or in specific areas of law, such as criminal law, corporate law, family and estate law, patent law, real estate law, or tax law.

(v) Medical or dental practices. Medical and dental practices shall include establishments that provide health care services, directly or indirectly, to patients.

(vi) Real estate management companies. Real estate management companies shall include establishments that are engaged in managing real estate for others and providing other real estate related services, such as appraisal services.

(vii) Hospitality. Hospitality-related businesses shall include establishments that provide lodging or short-term accommodations for travelers, vacationers, and others. Some provide lodging only; while others provide meals, laundry services, and recreational facilities, as well as lodging.

(viii) Finance and financial services. Finance and financial services businesses shall include establishments that are primarily engaged in financial transactions, that is, transactions involving the creation, liquidation, or change in ownership of financial assets, and/or in facilitating financial transactions.

(ix) Businesses providing personal services. Businesses providing personal services shall include businesses that provide personal and laundry services to individuals, households, and businesses. Services performed include: personal care services; death care services; laundry and dry cleaning services; and a wide range of other personal services, such as pet care services, photofinishing services, temporary parking services, and dating services.

(x) Businesses providing business administrative or support services, unless such business has received permission from the commissioner to apply to participate in the START-UP NY Program upon demonstration that the business would create no fewer than 100 net new jobs in the tax-free NY area. Businesses providing business administrative or support services shall include businesses that are engaged in activities that support the day-to-day operations of other organizations. These activities include general management, personnel administration, clerical activities, or cleaning activities.

(xi) Accounting firms or businesses providing accounting services. Accounting firms or businesses providing accounting services shall include establishments primarily engaged in providing services, such as auditing of accounting records, designing accounting systems, preparing financial statements, developing budgets, preparing tax returns, processing payrolls, bookkeeping, and billing.

(xii) Businesses providing utilities. Businesses that provide utilities shall include businesses that provide electric power, natural gas, steam supply, water supply, and sewage removal through a permanent infrastructure of lines, mains, and pipes.

(xiii) Businesses engaged in the generation or distribution of electricity, the distribution of natural gas, or the production of steam associated with the generation of electricity. Businesses engaged in the generation or distribution of electricity, the distribution of natural gas, or the production of steam associated with the generation of electricity shall include businesses that generate or distribute electric power, natural gas, or steam supply through a permanent infrastructure of lines, mains, and pipes.

(c) A business must satisfy all of the following criteria to apply to and participate in START-UP NY:

(1) A business must be a new business to the State at the time it submits its application to participate in START-UP NY, except where:

(i) the business successfully graduated from a New York State incubator;

(ii) the business once operated in New York but moved its operations out of New York State on or before June 1, 2013, and the commissioner determines the business has demonstrated it will substantially restore jobs in New York that it previously had moved out of the State; or

(iii) the commissioner determined that the business has demonstrated it will create net new jobs in the tax-free NY area and that it or any related persons has not eliminated any jobs in the State in connection with this expansion;

(2) the business may be organized as a corporation, a partnership, a limited liability company or a sole proprietorship;

(3) a business must be in compliance with all worker protection and environmental laws and regulations. In addition, a business may not owe past due Federal or State taxes or local property taxes;

(4) the mission and activities of the business must align with or further the academic mission of the university or college sponsoring the tax-free NY area in which it seeks to locate, and the business's participation in the START-UP NY Program must have positive community and economic benefits, including but not limited to employment; opportunities for internship, vocational training and learning experiences for undergraduate and graduate study; diversification of local economy; environmental sustainability; entrepreneurship; positive, non-competitive and/or synergistic links to existing businesses; effect on the local economy; and opportunities as a magnet for economic and social growth. Business involvement with sponsors can include, but is not limited to:

(i) funding scholarships, facilities, or other academic services or amenities;

(ii) offering internships, experiential learning opportunities, or full-time jobs to school graduates;

(iii) teaching a course, offering seminars, or providing student mentoring;

(iv) using company resources, intellectual property or expertise to support the academic mission;

(5) the business must demonstrate that it will, in its first year of operation, create net new jobs;

(6) the business must not be engaged in a line of business that is currently or was previously conducted by the business or a related person in the last five years in New York State, unless:

(i) the business once operated in New York but moved its operations out of New York on or before June 1, 2013, and the commissioner determines the business has demonstrated it will substantially restore jobs in New York that it previously had moved out of the State; or

(ii) the commissioner determined that the business has demonstrated it will create net new jobs in the tax-free NY area and that it or any related persons has not eliminated any jobs in the State in connection with this expansion.

(d) To remain eligible for the program, a business must satisfy the following criteria:

(1) the business must maintain, at a minimum, net new jobs created and during any year of operation, the average number of employees of the business and its related persons in the State during the year must equal or exceed the sum of:

(i) the average number of employees of the business and its related persons in the State during the year immediately preceding the year in which the business submits its application to locate in a tax-free NY area; and

(ii) net new jobs of the business in the tax-free NY area during the year.

The average number of employees of the business and its related persons in the State in a year is determined by taking the average number of total employees of the business and its related persons in the State on March 31st, June 30th, September 30th and December 31st of that year;

(2) a business must submit an annual report to the commissioner as described in section 220.16 of this Part.

(e) In addition to the other requirements of this section, in order to be eligible to participate in the START-UP NY Program in downstate New York, a business must be:

(1) in the formative stage of development; or

(2) engaged in the design, development, and introduction of new biotechnology, information technology, remanufacturing, advanced materials, processing, engineering or electronic technology products and/or innovative manufacturing processes, and meet such other requirements for a high-tech business as the commissioner shall develop.

(f) In addition to the other requirements of this section, in order to be eligible to participate in the START-UP NY Program, any business that has successfully completed residency in a New York State incubator pursuant to section 16-v of the Urban Development Corporation Act may apply to participate in the START-UP NY Program provided that such business locates in a tax-free NY area, even where that business is not a new business. A business that has successfully completed residency in a New York State incubator pursuant to section 16-v of the Urban Development Corporation Act and resides in an approved tax-free NY area may apply to participate in the START-UP NY Program if the business demonstrates it will create net new jobs in that tax-free NY area.

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220.7 Application process for eligible State university campuses, community colleges and city university campuses for approval as a tax-free NY area.

(a) In order to become a sponsor, an eligible SUNY, CUNY or community college must submit a plan for approval to the commissioner containing, among other things:

(1) specification or identification of space or land proposed for designation as a tax-free NY area identifying the following:

(i) name and address of the SUNY, CUNY or community college seeking approval as a sponsor, the address of the space or land proposed for designation as a tax-free NY area, and a written description of the physical characteristics of the area for designation;

(ii) digital files containing data, such as a polygon shapefile or other format approved by the commissioner, that delineates the area proposed for designation;

(iii) digital files containing data, such as a point shapefile or other format approved by the commissioner, that provides locations of the area proposed for designation. Such files must include a unique identifier for each feature;

(iv) digital files containing a chart that includes name of city, town or village where the area proposed for designation is located; street address; zip code; name of property owner; type of property; parcel identification number (if applicable and available); vacant building name/number; type of vacant space; total square footage of area for designation; unique identifier; and any geographic information system (GIS) maps or other format approved by the commissioner, as indicated on the application form, of the area comprising the proposed tax-free NY area, showing existing streets, highways, waterways, natural boundaries and other physical features;

(2) the total square footage of the space or acreage of land proposed for designation as a tax-free NY area;

(3) description of the type of business or businesses that may locate on the area to be designated;

(4) description of the academic mission of the sponsor and how the anticipated businesses will align or further the academic mission of the university or college;

(5) description of how participation by those types of businesses in the program would generate positive community and economic benefits, including but not limited to:

(i) increased employment opportunities;

(ii) increased opportunities for internships, vocational training and experiential learning for undergraduate and graduate study;

(iii) diversification of the local economy;

(iv) environmental sustainability;

(v) increased entrepreneurship opportunities;

(vi) positive, non-competitive and/or synergistic links to existing businesses;

(vii) effect on the local economy;

(viii) opportunities as a magnet for economic and social growth;

(6) description of the process the sponsor will follow to select participating businesses;

(7) copy of the university or college conflict of interest guidelines, as required by section 220.20 of this Part;

(8) attestation that the proposed tax-free NY area has not been financed with any tax-exempt bonds, or where the proposed tax-free NY area has been financed with any tax-exempt bonds, a formal opinion from counsel with expertise and experience in bond tax matters, or other documentation deemed acceptable by the commissioner, that designation of the tax-free NY area will not jeopardize or conflict with any existing tax-exempt bonds used to finance any property of the sponsor;

(9) certification that the sponsor has not relocated or eliminated any academic programs, any administrative programs, offices, housing facilities, dining facilities, athletic facilities, or any other facility, space or program that actively serves students, faculty or staff in order to create vacant land or space to be designated as a tax-free NY area; and

(10) certification that the information contained in such plan is accurate and complete.

(b) At least 30 days before submitting the plan to the commissioner, a SUNY, CUNY or community college must provide a copy of the plan to the chief executive officer of the municipality or municipalities in which the proposed tax-free NY area is located, a local economic development entity representing the area in which the proposed tax-free NY area is located, the applicable university or college faculty senate, union representatives and the campus student government. The SUNY, CUNY or community college shall include in the plan to the commissioner certification of such notification, as well as a copy of any written responses, received prior to submission of the plan to the commissioner, from the parties to which the plan was submitted.

(c) If the plan includes land or space located outside of the campus, the SUNY, CUNY or community college must consult with the chief executive officer of the municipality or municipalities in which such land or space is located prior to including such space or land in its proposed tax-free NY area and shall give preference to underutilized properties. The SUNY, CUNY or community college shall include in the plan to the commissioner certification of such consultation, as well as a copy of any written responses or comments received from the municipality or municipalities that were consulted.

(d) As part of the evaluation, the commissioner will consult with the chancellor of the applicable SUNY, CUNY or community college, or his or her designee, regarding the plan. The consultation can occur in writing or in person, in a form and manner to be determined by the commissioner. The commissioner shall have the right to reject, in his or her sole discretion, any application that he or she determines is incomplete, without making any determination to approve or disapprove the application. In such circumstances, the commissioner shall advise the chancellor of the applicable SUNY, CUNY or community college, or his or her designee, that the application has been rejected as incomplete.

(e) For all plans where the land or vacant space sought for approval as a tax-free NY area is submitted pursuant to the eligibility requirements of section 432(1) of the EDL, the commissioner, upon receipt of a complete application from an eligible SUNY, CUNY or community college, shall determine whether that university or college meets the eligibility criteria set forth in section 220.5 of this Part. A university or college that does not meet the criteria set forth in section 220.5 of this Part shall not be accepted into the program. Having determined that an application is complete and that the SUNY, CUNY or community college meets the eligibility criteria set forth in section 220.5 of this Part, the commissioner may accept the SUNY, CUNY or community college as a sponsor.

(f) For all plans where the land or vacant space sought for approval as a tax-free NY area is submitted pursuant to the eligibility requirements of section 432(2) of the EDL, the commissioner, upon receipt of a complete application from an eligible SUNY, CUNY or community college, shall determine whether that university or college meets the eligibility criteria set forth in section 220.5 of this Part. A university or college that does not meet the criteria set forth in section 220.5 of this Part shall not be accepted into the program. Having determined that an application is complete and that the university or college meets the eligibility criteria set forth in section 220.5 of this Part, the commissioner will forward the plan to the START-UP NY Approval Board. The board will examine the merits of each proposal, including but not limited to, compliance with the eligibility criteria set forth in section 220.5 of this Part, reasonableness of the economic and fiscal assumptions contained in the application and in any supporting documentation and the potential of the proposed plan to create new jobs. The board will also give preference to plans that include underutilized properties within their proposed tax-free NY areas. The board will prioritize for acceptance plans for tax-free NY areas in counties that contain a city with a population of 100,000 or more without a university center as of June 20, 2013, and shall approve applications in a manner that ensures regional balance and balance among eligible rural, urban and suburban areas in the State. The board by a majority vote shall approve or reject each plan forwarded to it by the commissioner.

(g) The sponsor will be notified in writing that the proposed available land or vacant space has been approved as a tax-free NY area and will be advised that the sponsor may solicit businesses immediately to locate into the approved tax-free NY area and apply to participate in the program. The commissioner will also publicly post information about approved tax-free NY areas on the department's website and encourage eligible businesses to locate into the approved tax-free NY area and apply to participate in the program.

(h) The commissioner shall have authorization to enter onto any land or space identified on any plan for approval as a tax-free NY area, as well as to have access to any information, documents, or records submitted in support of any plan, for the purposes of inspection, auditing and copying. Nothing herein shall diminish, or in any way adversely affect, New York State's right to discovery in any pending or future litigation, or the ability of the Department of Taxation and Finance or the Department of Labor to conduct any independent audit or review.

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220.8 Application process for eligible private university or college campuses for approval as a tax-free NY area.

(a) In order to become a sponsor, an eligible private university or college campus must submit a plan for approval to the commissioner containing, among other things:

(1) specification or identification of the space or land proposed for designation as a tax-free NY area identifying the following:

(i) name and address of the university or college campus seeking approval as a sponsor, the address of the space or land proposed for designation, and a written description of the physical characteristics of the area for designation;

(ii) digital files containing data, such as a polygon shapefile or other format approved by the commissioner, that delineates the area proposed for designation;

(iii) digital files containing data, such as a point shapefile or other format approved by the commissioner, that provides locations of the area proposed for designation. Such files must include a unique identifier for each feature;

(iv) digital files containing a chart that includes name of city, town or village where the area proposed for designation is located; street address; zip code; name of property owner; type of property; parcel identification number (if applicable and available); vacant building name/number; type of vacant space; total square footage of area for designation; unique identifier; and any geographic information system (GIS) maps or other format approved by the commissioner, as indicated on the application form, of the area comprising the proposed tax-free NY area, showing existing streets, highways, waterways, natural boundaries and other physical features;

(2) the total square footage of the space or land proposed for designation as a tax-free NY area;

(3) description of the type of business or businesses that may locate on that space or land;

(4) description of the academic mission of the sponsor and how the anticipated businesses will align or further the academic mission of the university or college;

(5) description of how participation by those types of businesses in the program would generate positive community and economic benefits, including but not limited to:

(i) increased employment opportunities;

(ii) increased opportunities for internships, vocational training and experiential learning for undergraduate and graduate study;

(iii) diversification of the local economy;

(iv) environmental sustainability;

(v) increased entrepreneurship opportunities;

(vi) positive, non-competitive and/or synergistic links to existing businesses;

(vii) effect on the local economy;

- (viii) opportunities as a magnet for economic and social growth;
- (6) description of the process the sponsor will follow to solicit businesses to locate in tax-free NY area and apply to participate in the START-UP NY program;
- (7) copy of the university or college conflict of interest guidelines, as required by section 220.20 of this Part;
- (8) attestation that the proposed tax-free NY area has not been financed with any tax-exempt bonds, or where any portion of the proposed tax-free NY area has been financed with any tax-exempt bonds, a formal opinion from counsel with expertise and experience in bond tax matters, or other documentation deemed acceptable by the commissioner, that designation of the tax-free NY area will not jeopardize or conflict with any existing tax-exempt bonds used to finance any property of the sponsor;
- (9) certification that the information contained in such plan is accurate and complete.
- (b) If the plan includes any land or space located outside of the university or college campus, the university or college must consult with the chief executive officer of the municipality or municipalities and notify a local economic development entity representing the area in which the proposed tax-free NY area is located prior to including such space or land in its proposed tax-free NY area at least 30 days prior to submitting the plan to the commissioner. The university or college shall include in the plan to the commissioner certification of such consultation and notification, as well as a copy of any written responses or comments, received prior to submission of the plan to the commissioner, from the parties with which the university or college consulted or to which the plan was submitted.
- (c) The commissioner shall have the right to reject, in his or her sole discretion, any application that he or she determines is incomplete, without making any determination to approve or disapprove the application. In such circumstances, the commissioner shall advise the university or college that the application has been rejected as incomplete.
- (d) Having determined that an application is complete and that the university or college meets the eligibility criteria set forth in section 220.5 of this Part, the commissioner will forward the plan to the START-UP NY Approval Board. The board will examine the merits of each proposal, including but not limited to, compliance with the eligibility criteria set forth in section 220.5 of this Part, reasonableness of the economic and fiscal assumptions contained in the application and in any supporting documentation and the potential of the proposed plan to create new jobs. The board will also give preference to plans that include underutilized properties within their proposed tax-free NY areas. The board will prioritize for acceptance plans for tax-free NY areas in counties that contain a city with a population of 100,000 or more without a university center as of June 20, 2013, and shall approve applications in a manner that ensures regional balance and balance among eligible rural, urban and suburban areas in the State. The board by a majority vote shall approve or reject each plan forwarded to it by the commissioner.
- (e) The sponsor will be notified in writing that the proposed available land or vacant space has been approved as a tax-free NY area and will be advised that the sponsor may solicit businesses immediately to locate into the approved tax-free NY area and apply to participate in the START-UP NY Program. The commissioner will also publicly post information about approved tax-free NY areas on the department's

website and encourage eligible businesses to locate into the approved tax-free NY area and apply to participate in the START-UP NY Program.

(f) Plans shall be accepted by the START-UP NY Approval Board throughout the year and shall be due at least 21 days before any board meetings for consideration at that meeting. Notwithstanding the provisions in this section, the START-UP NY Approval Board shall, in its discretion, review completed plans submitted pursuant to this section on a rolling basis.

(g) The commissioner shall have authorization to enter onto any land or space identified on any plan for approval as a tax-free NY area, as well as to have access to any information, documents, or records submitted in support of any plan, for the purposes of inspection, auditing and copying. Nothing herein shall diminish, or in any way adversely affect, New York State's right to discovery in any pending or future litigation, or the ability of the Department of Taxation and Finance or the Department of Labor to conduct any independent audit or review.

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220.9 Procedures for amending approved plans seeking designation of tax-free NY areas.

This section applies to any amendments to plans seeking designation of tax-free NY areas that have been approved by the commissioner or the START-UP NY Approval Board.

(a) A sponsor may seek to amend or modify the approved plan at any time. Amendments or modifications shall be submitted in the same manner as the original plan. The amendment must be submitted for approval pursuant to the procedures and requirements set forth in section 220.7 or 220.8 of this Part, whichever is applicable.

(b) Where a business has located and been approved to participate in the START-UP NY Program, amendments or modifications to the sponsor's plan may not violate the terms of any lease with such business in the approved tax-free NY area.

(c) Where a business that has located and been approved to participate in the START-UP NY Program is terminated from the program because it no longer meets the eligibility requirements of the program, and the business chooses not to relocate from the approved tax-free NY area, and the business does not have a lease with the sponsor, the sponsor may seek to amend or modify the plan to allocate an amount of vacant land or space equal to the amount of space occupied by the terminated business.

(d) Any amendments or modifications must be approved pursuant to the procedures and requirements set forth in section 220.7 or 220.8 of this Part, whichever is applicable.

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220.10 Businesses locating in tax-free NY areas.

- (a) To participate in START-UP NY, an eligible business must submit a complete application, as prescribed by the commissioner, on or before December 31, 2020.
- (b) For purposes of encouraging eligible businesses to locate in a tax-free NY area and participate in the program, sponsors are permitted to solicit and accept application from eligible businesses pursuant to the provisions of this Part and article 21 of the EDL.
- (c) A sponsor shall not accept any application to locate in a tax-free NY area from a business that would compete with other businesses in the same community but outside the tax-free NY area.
- (d) As part of such application, a business applicant must:
  - (1) agree to allow the Department of Taxation and Finance to share its tax information with the department. The form created by the department to effectuate this information transfer shall be executed only by a person with authority to act on the business entity's behalf in this regard. Any tax information shared as a result of this agreement shall be exempt from disclosure or inspection in accordance with the Freedom of Information Law, article 6 of the Public Officers Law;
  - (2) agree to allow the Department of Labor to share its tax and employer information with the department. The form created by the department to effectuate this information transfer shall be executed only by a person with authority to act on the business entity's behalf in this regard. Any tax and employment information shared as a result of this agreement shall be exempt from disclosure or inspection in accordance with the Freedom of Information Law, article 6 of the Public Officers Law;
  - (3) allow the department and its agents access to any and all books and records deemed relevant by the department to monitor compliance with the requirements of the program;
  - (4) provide, upon request by the department, all of the following information:
    - (i) the name, address, and employer identification number of the business;
    - (ii) identification of any parent, subsidiary and affiliated businesses, if any;
    - (iii) a description of the nature of the business, *i.e.*, identification of any goods produced or manufactured, or services to be rendered;
    - (iv) a description of the land or space the business will use, the terms of the lease agreement, if applicable, between the sponsor and the business, and whether or not the land or space being used by the business is being transferred or sublet to the business from some other business;
    - (v) description of any investment to be made in the tax-free NY area including, but not limited to, any plans for construction, rehabilitation or renovation; purchase or lease of equipment; estimated costs of investments; estimated schedule for the completion of any investment;
    - (vi) description of how the business plans to recruit employees from the local workforce;

(vii) certification by the business that it meets the eligibility criteria pursuant to this Part and article 21 of the EDL and will align with or further the academic mission of the sponsor;

(viii) certification of efforts to ascertain that, at the time of application, the business would not compete with any other business in the same community but outside the tax-free NY area, which certification shall include:

(a) an attestation by the sponsor that a review of 6-digit NAICS codes of businesses in the same community identifies no businesses in the same community with the same NAICS code;

(b) an affidavit of publication obtained by the sponsor from a daily print or online newspaper in the county where the applicable tax-free NY area is located that affirms that a notice regarding the application was published in such newspaper for no less than five consecutive days and an attestation by the sponsor that the published notice yielded no responses from businesses identifying themselves as competitors in the same community. Such notice shall include a detailed description of the applicant's proposed products or services and shall also include appropriate contact information for the university or college representative responsible for receiving START-UP NY business applications and all other information as determined by the commissioner;

(c) an attestation by the applicant that it does not compete with other businesses in the same community but outside the tax-free NY area;

(d) in the event that a potential competitor is identified, the sponsor must seek a letter from the commissioner determining whether the applicant business would compete with other businesses in the same community but outside the tax-free NY area. In such case, the commissioner shall conduct a review of available information and make a final determination as to whether the applicant has a competitor in the same community. Such review shall include, but not be limited to, a comparison of the products and/or services proposed to be provided by the business applicant and the products and/or services provided by the potential competitor or competitors. The commissioner will make the final determination about whether the business applicant will compete with other existing businesses in the same community but outside the tax-free NY area.

(ix) certification that the business's participation in the START-UP NY Program will have positive community and economic benefits;

(x) the prior three years of Federal and State income or franchise tax returns, unemployment insurance quarterly returns, real property tax bills and audited financial statements;

(xi) the employer identification or social security numbers for all related persons to the business, including those of any members of a limited liability company or partners in a partnership;

(xii) a list and description of all related persons to the business and certification that jobs are not being shifted within the State;

(xiii) certification, under penalty of perjury, that the applicant is in substantial compliance with all environmental, worker protection, and local, State and Federal tax laws;

(xiv) whether the business has previously applied for acceptance to locate into a tax-free NY area and the status of that application;

(5) include a statement of performance benchmarks, identifying the number of net new jobs that must be created, the schedule forecasting a five-year plan or projection for creating those jobs, and details on job titles and expected salaries. This statement of performance benchmarks must also indicate the maximum number of net new jobs eligible for the personal income tax benefit described in section 39(e) of the Tax Law to be created;

(6) include a statement of consequences for the failure to meet performance benchmarks, as determined by the business applicant and the sponsor, which shall include one or more of the following:

(i) suspension of such business's participation in the START-UP NY Program for one or more tax years as specified in such application;

(ii) termination of such business's participation in the START-UP NY Program; or

(iii) proportional recovery of tax benefits awarded under the START-UP NY Program as specified in section 39 of the Tax Law.

(a) In the event that the business chooses proportional recovery of tax benefits as a consequence of realizing job creation less than the estimated amount, and the number of net new jobs created is at least 75 percent of the number of net new jobs promised, then the tax benefits shall be reduced by the percentage by which the business failed to meet its performance benchmark, calculated as the ratio of the difference between new net jobs promised and actual net new jobs created divided by the net new jobs promised. For purposes of example, if the business promised to create 100 net new jobs but created only 90 net new jobs, the difference is 10 net new jobs. Dividing those 10 jobs not created by the 100 jobs promised shows that the number of jobs created is 10 percent less than the number of jobs promised. The business's tax benefits would therefore be reduced by 10 percent.

(b) In the event that the business chooses proportional recovery of tax benefits as a consequence of realizing job creation less than the estimated amount, and the number of net new jobs created is less than 75 percent of the number of net new jobs promised in any three years during the 10-year job creation schedule, then:

(1) in the first year that the business does not meet the 75 percent threshold, there shall be a proportional recovery of tax benefits;

(2) in the second year that the business does not meet the 75 percent threshold, such business's participation in the START-UP NY Program will be suspended; and

(3) in the third year that the business does not meet the 75 percent threshold, such business's participation in the START-UP NY Program may be terminated;

(7) in accordance with section 89(5) of the Public Officers Law, identify with specificity any information in the application that the applicant deems to be a trade secret or otherwise exempt from disclosure under the Freedom of Information Law, article 6 of the Public Officers Law.

(e) The sponsor, upon receipt of a complete application from a business applicant, shall determine whether the business applicant meets the eligibility criteria set forth in section 220.6 of this Part. An application that meets the eligibility criteria set forth in section 220.6 of this Part may then be

forwarded by the sponsor to the commissioner for further review to determine whether the business meets all of the requirements, as well as the intended purpose, of article 21 of the EDL.

(1) Where the sponsor is a SUNY college or university and proposes to enter into a lease with a term greater than 40 years (including any options to renew) with the business applicant for eligible land in a tax-free NY area or for eligible land in a tax-free NY area of one million or more square feet, the sponsor must also submit a copy of the proposed lease to the START-UP NY Approval Board at the same time the application is provided to the commissioner. If the board disapproves of the lease, it must provide to the sponsor a statement of reason for disapproval and suggestions for modifications within 30 days of receipt. The sponsor may then submit a modified lease in accordance with the board's suggestions to the commissioner for review as part of the business application. If the board does not disapprove of the lease within 30 days of receipt, it shall be deemed approved by the board and the application shall be deemed ready for review by the commissioner.

(f) When forwarding a completed business application to the commissioner, the sponsor must include a certification that it will adhere to any and all applicable requirements under article 21 of the EDL, article 8 of the Labor Law and article 15-A of the Executive Law.

(g) An applicant that does not meet the criteria set forth in section 220.6 of this Part shall not be approved to locate to a tax-free NY area or be accepted into the program.

(h) The commissioner, upon receipt of a complete application from a sponsor, shall conduct a further review to determine whether the business meets all of the requirements, as well as the intended purpose, of article 21 of the EDL. The commissioner shall consider, among other things, whether the applicant:

(1) meets all of the eligibility criteria set forth in section 220.6 of this Part;

(2) has submitted a complete application;

(3) has complied with the application requirements of this section; and

(4) demonstrated that the business's participation in the START-UP NY Program will have positive community and economic benefits.

(i) The commissioner may reject the application upon a determination that the applicant does not meet the eligibility criteria set forth in section 220.6 of this Part or any other requirement, as well as the intended purpose, of article 21 of the EDL.

(j) If the commissioner rejects the application, he or she shall provide written notice of such rejection to the sponsor.

(k) The commissioner may approve the application anytime after receipt; if the commissioner approves the application, the business applicant is deemed accepted into the START-UP NY Program and can locate to the sponsor's tax-free NY area. If the commissioner does not reject the application within 60 days of receipt, the business applicant is deemed accepted into the START-UP NY Program and can locate to the sponsor's tax-free NY area. The commissioner's 60-day review period is suspended pending any review or modification of any proposed lease, if any, between a SUNY sponsor and an applicant. The application of the business shall constitute the contract between the business and sponsor. The sponsor

must provide an accepted business with documentation of its acceptance in such form as prescribed by the Commissioner of Taxation and Finance, which will be used to demonstrate such business's eligibility for the tax benefits specified in section 39 of the Tax Law.

(l) Where the commissioner determines that the number of net new jobs eligible for the personal income tax benefit under section 39(e) of the Tax Law will exceed the allowable total aggregate net new jobs in the year in which the application is accepted, the business will be given priority in the subsequent year and all net new jobs identified in the business application's performance benchmarks will be eligible for the personal income tax benefit the following year.

(m) At the conclusion of the lease term between the sponsor and the business for land or space in a tax-free NY area owned by the sponsor, if applicable, the leased land or space and any improvements thereon shall revert to the sponsor, unless the lease is renewed.

5 CRR-NY 220.10

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220.11 Amendments to a business's application for acceptance into the program.

This section applies to any amendments made to the original application following approval of the business applicant into the program pursuant to section 220.10 of this Part.

(a) Following approval and acceptance into the program, a business may amend any part of its application at any time to reflect any changes, so long as the amendments are made in the same manner as the application for participation in the program. A business may amend its schedule of job creation in the same manner that it applied for participation in the program, and any increase in eligibility for personal income tax benefits on behalf of additional net new jobs shall be subject to the limitations of section 220.6 of this Part.

(b) If the original application included a lease between the business applicant and a SUNY college or university, any amendments to the application may not violate the terms of such lease or provide for any contradictory terms.

5 CRR-NY 220.11

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220.12 Re-application process for businesses rejected from the program.

This section applies to re-applications made as a result of an applicant being rejected from the program for failing to meet the requirements of section 220.6 of this Part or any other requirement, as well as the intended purpose, of article 21 of the EDL, pursuant to section 220.10 of this Part.

(a) With sponsor approval, an applicant that has been rejected from the program may choose to locate into a tax-free NY area but will not be eligible for any of the benefits associated with the program.



(b) An applicant that has been disapproved or rejected from the START-UP NY Program may submit a re-application to the commissioner by submitting, in writing within 60 days of receipt of written rejection, a request for re-application. The request must identify the basis for the disapproval or rejection, as well as specific factual information (along with documentation establishing that information) and any arguments in support of the re-application. Failure by a business to request re-application within the aforementioned 60-day period will be deemed a waiver of the applicant's ability to submit a re-application.

(c) The commissioner may review all arguments contained in the re-application, all information in the original submissions, as well as any information independently obtained. Nothing herein precludes the commissioner from obtaining information from any outside source, as deemed appropriate. The commissioner may request additional information from the applicant in support of the re-application. At the commissioner's sole discretion, the commissioner may conduct an in-person interview with any person who has information regarding the application. The level of formality of any interview shall be at the discretion of the commissioner.

(d) The commissioner shall notify the sponsor, within 60 days of receipt of an applicant's complete re-application, of the commissioner's approval or disapproval of the re-application. A disapproval of a re-application will be deemed final and non-appealable.

5 CRR-NY 220.12

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220.13 Auditing process.

The department, the Department of Taxation and Finance, and the Department of Labor shall have access to all information, records, and documents of a business located in a tax-free NY area and participating in the START-UP NY Program. Such access shall be provided during normal business hours at an office of the business within the State of New York for the purposes of inspection, auditing and copying. The aforementioned agencies shall take reasonable steps to protect from public disclosure any records that are exempt from disclosure under section 87 of the Public Officers Law, provided that the business, in accordance with section 89(5) of the Public Officers Law, identifies the records or portions of records that should be excepted from disclosure and states the reasons for such exception. Nothing herein shall diminish an agency's rights or obligations under the Freedom of Information Law, or in any way adversely affect New York State's right to discovery in any pending or future litigation.

5 CRR-NY 220.13

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220.14 Removal of business from the program.

- (a) A business that violates any New York State laws, including but not limited to tax, labor and civil rights laws, or is found to have materially misrepresented facts in its application for participation in the program, or moves out of a tax-free NY area will be subject to immediate termination from the program.
- (b) If the sponsor determines that a business no longer satisfies any of the eligibility criteria set forth in section 220.6 of this Part or any other requirement, as well as the intended purpose, of article 21 of the EDL, the sponsor may recommend to the commissioner that the business be immediately removed from participation in the program.
- (c) The commissioner shall remove any business from the program for failing to meet any of the eligibility criteria set forth in section 220.6 of this Part or any other requirement, as well as the intended purpose, of article 21 of the EDL.
- (d) If the commissioner has removed the business from the program, the commissioner shall notify the sponsor and the business of such removal in writing. Such notice of removal shall explain the reason or reasons for the removal from the program. The notice of removal shall state the effective date of removal, and advise the business that it may appeal the removal in accordance with section 220.15 of this Part. Such notice may be served by the department on the business by certified, registered or overnight mail sent to the business at the address last provided to the department by the business and shall be deemed served three business days after being sent.
- (e) A copy of the notice of removal shall be sent to the Commissioner of Taxation and Finance within 30 days following a final appeal determination or waiver of appeal.
- (f) Upon such removal, such business shall not be eligible for the tax benefits described under section 39 of the Tax Law for that or any future taxable year, calendar quarter or sales tax quarter, although an employee of such business may continue to claim the tax benefit for their wages during the remainder of that employee's taxable year.
- (g) Any lease or contract between a sponsor and a business removed from the program shall be rescinded, effective on the 30th day after the commissioner serves a removal notice on such business, and the land or space and any improvements thereon shall revert to the sponsor.

5 CRR-NY 220.14

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220.15 Appeal procedures for businesses upon removal from the program.

This section applies to appeals taken as a result of a business being removed from the program pursuant to section 220.14 of this Part.

(a) The commissioner may designate any impartial person or persons to act as an appeal officer. Such persons may not include a member of the START-UP Approval Board or anyone with a real or perceived conflict of interest.

**(b) Notice of appeal.**

(1) A business that received a removal notice pursuant to section 220.14 of this Part may send a written notice of appeal to the commissioner appealing the removal by no later than 30 days from the date of service of the removal notice. Failure by a business to appeal the commissioner's denial or removal of certification within the 30-day period will be deemed a waiver of the business's right to an appeal.

(2) The notice of appeal must contain specific factual information (along with documentation establishing that information), and all legal arguments that are the basis for the business's challenge to the removal.

(3) A notice of appeal must be sent to the commissioner at the address indicated in the removal notice.

(4) Counsel to the department may file a response to the notice of appeal with the appeal officer. Any response should address the factual and legal allegations contained in the notice of appeal. A copy of the response shall be sent to the business, or to the attorney representing the business.

**(c) Authority of appeal officer.**

(1) The appeal officer shall evaluate the merits of the appeal and any response from counsel to the department. Where the appeal officer deems it appropriate, the appeal officer may require the business or counsel to the department to address additional issues or submit additional information regarding the appeal.

(2) Nothing herein shall preclude the appeal officer from obtaining information from any outside source, as he or she deems appropriate.

(3) The appeal officer shall determine whether he or she deems it necessary to conduct a fact-finding hearing, and the level of formality of any hearing conducted.

**(d) Appeal officer's report.**

The appeal officer shall prepare a report and make recommendations to the commissioner. The recommendations may be in the form of a proposed decision which will contain findings of fact and conclusions of law. This report, along with the entire record, shall be transmitted to the commissioner, counsel to the department, and the business entity that filed the appeal.

**(e) Appeal decision.**

After receipt of the appeal officer's report, the commissioner shall issue a final decision and serve a copy on the business or its representative. If the commissioner issues a final decision that includes findings of fact or conclusions of law that conflict with the recommendations of the appeal officer, the decision shall set forth the reasons therefor.

5 CRR-NY 220.15

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220.16 Disclosure authorization, annual verification and required reporting.

(a) By submitting an application for participation in the program, the business authorizes the commissioner to disclose publicly the name and address of the business to be located within a tax-free NY area, as well as any other information contained in such business' application, including the projected number of net new jobs to be created.

(b) Each business must submit an annual performance and verification report, in such form as the commissioner may require within 30 days at the end of its taxable year, identifying, among other things:

(1) certification of continued eligibility in the program;

(2) the number of net new jobs created;

(3) the number of net new jobs maintained from the previous calendar year;

(4) wages paid during the year to its employees employed in the net new jobs created in the tax-free NY area.

(c) The commissioner may disclose the annual performance and verification reports publicly and include it in any the reports required of the commissioner by article 21 of the EDL.

(d) The commissioner shall prepare on an annual basis a program report for posting on the department's website. The first report will be due on December 31, 2014 and on December 31st every year thereafter. Such report shall include, but not be limited to, the following information: the names and location of sponsors and tax-free NY areas; the number of business applicants; the number of businesses approved; the names of approved businesses; the total amount of benefit certified; the benefits received per business; the total number of net new jobs created; the number of net new jobs created per business; and such other information that the commissioner deems necessary or useful.

(e) The commissioner shall prepare an annual report to the Governor and the Legislature. Such report shall include the number of business applicants, the number of businesses approved, the names and addresses of the businesses located within a tax-free NY area, the total amount of benefits distributed, the benefits received per business, the number of net new jobs created, the net new jobs created per business, the new investment per business, the types of industries represented, and such other information that the commissioner deems necessary or useful to evaluate the progress of the program.

(f) On or before December 31, 2020, the commissioner shall prepare an evaluation of the effectiveness of the program and deliver it to the Governor and the Legislature to determine continued eligibility for application submissions.

5 CRR-NY 220.16

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220.17 Freedom of Information Law and disclosure.

(a) The commissioner, to the extent practicable and legally permissible, may disclose publicly the names and addresses of the businesses receiving any of the tax benefits specified in this section. In addition,

the commissioner may disclose publicly the amounts of such benefits allowed to each such business, and whether or not a business created or maintained net new jobs during the taxable year.

(b) The commissioner, to the extent practicable and legally permissible, may publicly disclose the aggregate amounts of such tax exemption allowed to employees. In addition, the commissioner may publicly disclose the number of net new jobs any business reports on its tax return or report or any other information necessary for the commissioner or the sponsor to monitor and enforce compliance with the law, rules and regulations governing the program.

(c) Notwithstanding any provision to the contrary, the Commissioner of Taxation and Finance, in determining whether a business or any of its owners is entitled to the tax benefits under the program, may utilize and if necessary, disclose to the commissioner, information derived from the tax returns of such business or related persons of such business and wage reporting information relating to any employees of such business or its related persons.

**(d) Freedom of Information Law disclosure waiver.**

(1) Except to the extent required by any law, regulation, judicial or administrative process, including, but not limited to the Freedom of Information Law, article 6 of the Public Officers Law, proprietary information or supporting documentation submitted by a business to a sponsor shall be utilized only for the purpose of evaluating such business's application or compliance with the provisions of article 21 of the EDL and shall not be otherwise disclosed.

(2) Any person who willfully discloses such information to a third party for any other purpose whatsoever shall be guilty of a misdemeanor except if:

(i) such person is required or authorized to disclose such information pursuant to any law, regulation, judicial or administrative process including the Freedom of Information Law;

(ii) such information otherwise becomes publicly available through no fault of such person;

(iii) such information becomes available on a non-confidential basis from a source other than the business;

(iv) such information is known prior to its receipt from the business or without any obligations of confidentiality with respect thereto; or

(v) such information is developed independently of any disclosure made by the business of any proprietary information.

5 CRR-NY 220.17

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220.18 Record retention.

(a) Each business located in a tax-free NY area and receiving tax benefits through the program shall keep all relevant records for the duration of program participation plus three years.

(b) The department shall have the right to inspect all relevant records upon reasonable notice to the sponsor or business.

5 CRR-NY 220.18

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220.19 Penalties for fraud in the program.

If the commissioner determines that any business located in a tax-free NY area and participating in the program has acted fraudulently in connection with its participation in such program, such business:

- (a) shall be immediately terminated from the program;
- (b) shall be subject to applicable criminal penalties, including but not limited to the felony crime of offering a false instrument for filing in the first degree pursuant to section 175.35 of the Penal Law; and
- (c) shall be required in that year to add back to tax the total value of the tax benefits described in section 39 of the Tax Law that such business has received and that the employees of such business have received up to the date of such finding. The amount required to be added back shall be reported on such business's corporate franchise report if such business is taxed as a corporation or on the corporate franchise tax reports or personal income tax returns of the owners of such business if such business is taxed as a sole proprietorship, partnership or New York S corporation.

5 CRR-NY 220.19

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220.20 Conflict of interest guidelines.

(a) Each university or college participating in the START-UP NY Program shall adopt a conflict of interest policy. Such conflict of interest policy shall provide, as it relates to the program:

- (1) as a general principle, that service as an official of the university or college shall not be used as a means for private benefit or inurement for the official, a relative thereof, or any entity in which the official, or relative thereof, has a business interest;
- (2) no official who is a vendor or employee of a vendor of goods or services to the university or college, or who has a business interest in such vendor, or whose relative has a business interest in such vendor, shall vote on, or participate in the administration by the university or college, as the case may be, of any transaction with such vendor; and
- (3) upon becoming aware of an actual or potential conflict of interest, an official shall advise the president or chief executive officer of the university or college, as the case may be, of his or her or a relative's business interest in any such existing or proposed vendor with the university or college.

(b) Each university or college shall maintain a written record of all disclosures of actual or potential conflicts of interest made pursuant to this section, and shall report such disclosures, on a calendar year basis, by January 31st of each year, to the auditor for such university or college. The auditor shall forward such reports to the commissioner, who shall make public such reports.

(c) For purposes of such conflict of interest policies:

(1) an official of a university or college has a "business interest" in an entity if the individual:

(i) owns or controls 10 percent or more of the stock of the entity (or one percent in the case of an entity the stock of which is regularly traded on an established securities exchange); or

(ii) serves as an officer, director or partner of the entity;

(2) a *relative of an official of a university or college* shall mean any person living in the same household as the individual and any person who is a direct descendant of that individual's grandparents or the spouse of such descendant; and

(3) an *official of a university or college* shall mean an employee at the level of dean and above as well as any other employee with decision-making authority over the START-UP NY Program.

5 CRR-NY 220.20

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OHIO



## **3345.36 Establishment and development of entrepreneurial projects.**

(A) For purposes of this section:

- (1) "Entrepreneurial project" means an effort to develop or commercialize technology through research or technology transfer or investment of real or personal property, or both, including undivided and other interests therein, acquired by gift or purchase, constructed, reconstructed, enlarged, improved, furnished, or equipped, or any combination thereof, by an institution of higher education or by others.
- (2) "Governmental agency" has the same meaning as in section 166.01 of the Revised Code.
- (3) "Person" means individuals or entities engaged in industry, commerce, distribution, or research.
- (4) "Institution of higher education" has the same meaning as in section 3345.12 of the Revised Code.
- (5) "Stock or other ownership" means equity or other ownership rights held or received in return for the grant of rights to intellectual property developed by an institution of higher education. "Stock or other ownership" excludes equity or other ownership rights held or received in return for the investment of money.

(B) To create or preserve jobs and employment opportunities and to improve the economic welfare of the people of the state pursuant to Section 13 of Article VIII, Ohio Constitution, it is hereby declared to be the public policy of the state for institutions of higher education to facilitate and assist with establishing and developing entrepreneurial projects or to assist and cooperate with any governmental agency in achieving such purpose. An entrepreneurial project is hereby determined to qualify as property, structures, equipment, and facilities described in Section 13 of Article VIII, Ohio Constitution.

In furtherance of such public policy, and pursuant to Section 13 of Article VIII, Ohio Constitution, a board of trustees of an institution of higher education may do any of the following by resolution:

- (1) Enter into an agreement with persons and with governmental agencies to induce such persons to acquire, construct, reconstruct, rehabilitate, renovate, enlarge, improve, equip, furnish, or otherwise develop entrepreneurial projects;
- (2) Acquire stock or other ownership in an entrepreneurial project or a legal entity formed in connection with an entrepreneurial project;
- (3) Make or guarantee loans and borrow money and issue bonds, notes, or other evidence of indebtedness to provide moneys for the acquisition, construction, enlargement, improvement, equipment, maintenance, repair, or operation of entrepreneurial projects, provided that such bonds, notes, or other evidence of indebtedness shall not constitute debt for which the full faith and credit of the state or an instrumentality or political subdivision of the state may be pledged and moneys raised by taxation shall not be obligated or pledged for their repayment.

Added by 128th General Assembly File No.9, HB 1, §101.01, eff. 10/16/2009.



PENNSYLVANIA





Kathy Tenopir &lt;ktenopir@leg.ne.gov&gt;

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## Pennsylvania - research/tecnology park

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Barry Denk <denkb@rural.palegislature.us>  
To: "ktenopir@leg.ne.gov" <ktenopir@leg.ne.gov>

Wed, Jun 17, 2015 at 1:37 PM

Kathy,

Here is some information on Pennsylvania:

Kathy, Kind of swamped right now, but here are some links to information pertaining to your questions.

<http://www.upenn.edu/pennnews/news/penn-advances-plans-innovation-and-research-park-south-bank-master-plan>

<http://www.innovationpark.psu.edu/>

<http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/keystone-innovation-zone-tax-credit-program>

Barry L. Denk, Director  
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The University of Pennsylvania has released its plans for developing a research park on the 23-acre former DuPont property, located along the Schuylkill River in the Grays Ferry section of Philadelphia. The master plan for Penn's South Bank envisions a new University asset devoted to advancing research and innovation, and the commercialization of research into new products, services and entrepreneurial ventures.

The South Bank plan, produced by Philadelphia-based planning firm WRT, is a critical aspect of the Penn Connects 2.0 campus development strategy, which has already added nearly 3 million square feet of space to Penn's campus since 2006 while increasing open space on campus by 25 percent.

"The South Bank of the future will be a dynamic, mixed-use incubator of ideas," said President Amy Gutmann. "This forward-thinking master plan will provide cutting-edge facilities and professional services for Penn's community of innovators, researchers, students and entrepreneurs, in order to accelerate the formation of new, University-based business ventures. It puts Penn at the forefront of new business development in the region and creates the potential for transformational change along the banks of the river just south of our campus."

The plan is designed to support entrepreneurial growth as well as innovation for the technology-led economic development shift underway in Philadelphia. The South Bank master plan aligns with the already-released plans by the Philadelphia Industrial Development Corporation for the long-term revitalization of the entire Lower Schuylkill River into a 500-acre Innovation District that creates a stronger corridor of commercial activity anchored by Penn to the north and the Navy Yard to the South, with the Philadelphia International Airport and other transportation hubs located within the center.

The PIDC master planning, utilizing public/private partnerships, will expand riverfront green space, and connect Penn Park and the Schuylkill River Banks trail system with park land and trails east and south of the site. The South Bank's strategic location has potential for creating a new keystone that secures University City, Center City and the lower river Innovation District as the three engines of Philadelphia's economy.

The South Bank will be anchored by the Pennovation Center, a new business incubator and accelerator that will provide lab space and a hub for collaboration, creativity and the exchange of ideas for innovators from all disciplines. Such facilities are key components in the success of research parks as they combine the technically advanced facilities, expert workforce and researchers that a university can supply with the professional development and venture capital that entrepreneurs provide. South Bank has been attracting tenants to the space since 2010 through the adaptive use of existing buildings and some new construction, including such

innovators as:

- Penn Vet Working Dog Center -- the premier educational and research facility dedicated to harnessing the unique strengths of our canine partners for public safety and human health;
- Penn Dental Research Greenhouse -- conducting research on plants as shelf-stable incubators for medicine at a cost effective distribution method;
- Penn School of Arts & Sciences Bio Garden -- researching the impact of insects on plants;
- Penn Transit Services -- the fleet management operation of the University, including a new sustainable propane fueling station for the city;
- KMEL Robotics -- a spinoff of Penn's GRASP lab in the School of Engineering and Applied Science that has achieved recognition for its customized flying Quadrotor robots;
- Novapeutics -- established through Penn's UPStart program, developing treatment for diabetes;
- Jin+Ja -- offices of locally produced health beverage company;
- Edible Philly -- local offices of a national publishing company focused on culinary arts;
- The Philadelphia Free Library Operations Center.

The master plan articulates a phased approach, with the initial development activity focused on constructing light industrial and flex-use buildings easily scaled to fit the needs for practical commercialization and business opportunities in the region. While currently utilizing the existing building capacity of 200,000 square feet, the market analysis absorption planned for the next 20 years is estimated at 750,000 square feet with a long-term site development capacity envisioned up to 1.5 million square feet.

Additional information about the South Bank is available at [www.pennconnects.upenn.edu](http://www.pennconnects.upenn.edu).

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#### Multimedia



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Penn's 259th University Commencement drew visitors from all corners of the world Monday, May 18, filling Franklin Field with languages representative of Penn's widely diverse community.



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A partnership between Penn Vet's Shelter Animal Medicine program and Pets for Life enhances the education of veterinary students while providing animals in underserved communities with the care they need—but their owners may not be able to afford.



### Marking 100 Years of Hey Day

Celebrating the 100th Hey Day on April 30, members of Penn's Class of 2016 marched with canes along Locust Walk, wearing red shirts and flat-brimmed, faux-straw hats. Adobe Flash is required to view this content Download the Flash plug-in...

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# Innovation Park at Penn State

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## STEM Valley



Why Innovation Park is more than just real estate.

# Innovation and Research Come Together



Journeys: A Quarterly Publication



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## Innovation Park at Penn State

Welcome to Innovation Park at Penn State, an ecosystem where business, education and research come together.

Innovation Park at Penn State offers 118-acres of remarkable office, manufacturing and research space, and is part of one of the world's premier research institutions, with access to Penn State's scientific, engineering, technology and business resources, as well as the support services needed to transfer knowledge from the



## New to the Park?



University to the marketplace. The network of resources available at Innovation Park supports early-stage entrepreneurs and established businesses alike. Innovation Park at Penn State is home to the Penn State Conference Center Hotel—a 300-room hotel with world class conference facilities. Just a few miles from the University Park Airport and directly off of Interstate-99, the Park is easily accessible for travelers.

## Contact Us

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## Hear It From Our Tenants

The greatest benefit of our location i  
Innovation Park is the cross-pollinati  
goes on. We can inspire and help ea  
and we do. We get together for lunc  
offer one another advice.

Here at Innovation Park and Penn St  
people are willing to help with no str  
attached. We can find top flight rese  
and very experienced people. We ar  
confident we can succeed here.

We do conferences here at the Peni

attracting 400-500 business leaders entrepreneurs from across the country huge plus to have that facility in wall distance.

The greatest benefit of our location in Innovation Park is the cross-pollination goes on. We can inspire and help each other and we do. We get together for lunch offer one another advice.

Here at Innovation Park and Penn State people are willing to help with no strings attached. We can find top flight research and very experienced people. We are confident we can succeed here.

We do conferences here at the Penn State Innovation Park attracting 400-500 business leaders entrepreneurs from across the country huge plus to have that facility in wall distance.

The greatest benefit of our location in



Innovation Park is the cross-pollination goes on. We can inspire and help each other and we do. We get together for lunch offer one another advice.

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# Keystone Innovation Zone Tax Credit Program

July 9, 2015

## Overview

An incentive program that provides tax credits to for-profit companies less than eight years old operating within specific targeted industries within the boundaries of a Keystone Innovation Zone (KIZ). With a total pool of up to \$25 million in tax credits available to KIZ companies annually, the KIZ tax credit program significantly contributes to the ability of young KIZ companies to transition through the stages of growth.

Applications must be submitted on or before September 15 of each year.

## Uses

Tax credits must be applied against the tax liability of a KIZ company for the tax year in which the KIZ Tax Credit was issued. Unused KIZ Tax Credits may be applied against the tax liability of the KIZ company for up to five years from date the KIZ Tax Credit is issued or may be reassigned/sold to another taxpayer.

## Funding

A KIZ company may claim a tax credit equal to 50% of the increase in that KIZ Company's gross revenues in the immediately preceding taxable year attributable to activities in the KIZ, over the KIZ Company's gross revenues in the second preceding taxable year attributable to its activities in the KIZ. The KIZ Tax Credit is limited to \$100,000 annually per KIZ company.

## Eligibility

For-profit business entities 1) located within the geographic boundaries of a particular KIZ, 2) in operation less than 8 years, 3) operating within one of the KIZ targeted industry segments or sectors, 4) and meeting any other requirements as specified by the DCED may be qualified KIZ Companies and eligible to participate in the KIZ Tax Credit Program. Applications must be submitted on or before September 15 of each year. The KIZ Tax Credits will be awarded on December 15<sup>th</sup> of the year the application was submitted.

## **Terms**

The KIZ Tax Credit must first be applied against the KIZ company's own tax liability under Articles III (Personal Income Tax), IV (Corporate Net Income Tax), or VI (Capital Stock – Franchise Tax) of the Pennsylvania Tax Reform Code of 1971. Tax credits not used in the tax year the contribution was made may not be carried forward or carried back and is not refundable or transferable. Unused KIZ Tax Credits may applied against the tax liability of the KIZ company for up to five years from date the KIZ Tax Credit is issued or may be reassigned/sold to another taxpayer.

## **How to Apply**

The Single Application must be submitted online at [Single Application](#). For assistance in completing the Single Application, call 1-800-379-7448.

## **FAQs**

For specific questions on this program, contact DCED's Technology Investment Office at: [RA-TechInvTaxCredit@state.pa.us](mailto:RA-TechInvTaxCredit@state.pa.us).

## **Additional Information**

### **KIZ Coordinator Contact Information**

[Contact Sheet](#)

### **Sales Assignment Application Form**

[KIZ Tax Credit Sales Assignment Application Form](#)

### **How To Apply For The 2014 Tax Credit**

[KIZ Tax Credit Worksheet for 2015](#)

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### **KIZ Tax Credit Awards**

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## **KIZ Tax Credit Annual Reports**

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SOUTH CAROLINA



# South Carolina Legislature

South Carolina Law > Code of Laws > Title 13

## South Carolina Code of Laws Unannotated Current through the end of the 2014 Session

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### Title 13 - Planning, Research and Development

#### CHAPTER 17

#### South Carolina Research Authority

#### **SECTION 13-17-10.** Establishment of South Carolina Research Authority.

There is created a body corporate and politic to be known as the South Carolina Research Authority or as the SCRA.

HISTORY: 1983 Act No. 50 Section 2, eff April 29, 1983; 1984 Act No. 309, Section 1, eff March 23, 1984; 1996 Act No. 308, Section 1, eff upon approval (became law without the Governor's signature on May 7, 1996); 2002 Act No. 172, Section 1, eff February 8, 2002; 2005 Act No. 133, Section 1, eff June 7, 2005.

#### **SECTION 13-17-20.** South Carolina Research Authority; divisions; objectives.

The SCRA (authority) is organized to enhance the research capabilities of the state's public and private universities, to establish a continuing forum to foster greater dialogue throughout the research community within the State, and to promote the development of high technology industries and research facilities in South Carolina. The SCRA shall contain at least two divisions: the South Carolina Research Division (SCRD) and the South Carolina Research Innovation Centers (SCRIC). The SCRD shall perform those duties as outlined in this chapter that relate to the core mission of the SCRA. The SCRIC shall perform those duties as outlined in this chapter that establish innovation centers in South Carolina. The objectives of the authority include but are not limited by the following to:

- (1) advance the general welfare of the people;
- (2) increase the opportunities for employment of citizens of South Carolina;
- (3) develop the human, economic, and productive resources of South Carolina;
- (4) promote and encourage expansion of the research and development sector, with emphasis on capital formation and investments in research and development within South Carolina;
- (5) create and maintain a dialogue between the public and private research communities;
- (6) enhance the potential for private support for South Carolina colleges and universities, to promote cooperative research efforts between the private sector and South Carolina universities and colleges, and to strengthen the partnership among state government, higher education, and business and industry;
- (7) assist South Carolina colleges and universities in attracting nationally prominent academic researchers and professors and to serve as an initial linkage between the state's outstanding existing research and the business and industrial sector;
- (8) maximize the research capabilities of the public and private universities and colleges in South Carolina; and
- (9) foster the perception of South Carolina as an international leader in the idea generation and the development, testing, and implementation of new advances in science and technology.

HISTORY: 1983 Act No. 50 Section 2, eff April 29, 1983; 2005 Act No. 133, Section 1, eff June 7, 2005.

#### **SECTION 13-17-30.** Reserved by 2005 Act No. 133, Section 1, eff June 7, 2005.

#### **SECTION 13-17-40.** Members of board; terms; vacancies; compensation; annual reports; meetings.

(A)(1) The SCRA shall consist of a board of twenty-four trustees that includes the following ex officio members: President of the Council of Private Colleges of South Carolina, Chairman of the South Carolina Commission on Higher Education, President of Clemson University, President of the Medical University of South Carolina, President of South Carolina State College, President of the University of South Carolina, Director of Savannah River National Laboratory, President of Francis Marion University, Chairman of the State Board for Technical and Comprehensive Education, Governor of South Carolina or his designee, Chairman of the House Ways and Means Committee or his designee, Chairman of the Senate Finance Committee or his designee, and the Secretary of Commerce or his designee.

(2) The Governor shall name the chairman who must not be a public official and who serves at the pleasure of the Governor. The remaining ten trustees must be elected by the board of trustees from a list of nominees submitted by an ad hoc committee named by the chairman and composed of the members serving as elected trustees. Each of the Congressional Districts of South Carolina must have at least one of the ten trustees.

(3) Terms of elected trustees are for four years, and half expire every two years. An elected trustee may not serve more than two consecutive four-year elected terms. Vacancies must be filled for the unexpired term in the manner of original appointment. A vacancy occurs upon the expiration of the term of service, death, resignation, disqualification, or removal of a trustee.

(B)(1) The President of Clemson University, President of the Medical University of South Carolina, President of the University of South Carolina at Columbia, the Governor or his designee, the Chairman of the House Ways and Means Committee or his designee, the Chairman of the Senate Finance Committee or his designee, and the Chairman of the Board of Trustees shall serve on the executive committee of the board of trustees. The executive committee shall elect two additional members of the executive committee, who shall be trustees at the time of their election, by the affirmative vote of a majority of the members of the executive committee then serving. Each of the three university presidents, with respect to no more than two executive committee meetings each calendar year, may designate in his place that university's chief research officer, as determined in the sole discretion of the designating president, to participate in and vote at executive committee meetings specified in the designation. The executive committee has all powers and authority of the board of trustees. The board shall have an advisory role only and shall advise the executive committee of the actions recommended by the board.

(2) Terms of elected executive committee members are for four years, and half expire every two years. An elected executive committee member may not serve more than two consecutive four-year elected terms. A vacancy must be filled for the unexpired term in the manner of original election, and occurs upon the expiration of the term of service, death, resignation, disqualification, or removal of an elected executive committee member. An elected executive committee member need not continue to be a trustee in order to complete his term as an executive committee member. An elected executive committee member may be removed from office by the affirmative vote of two-thirds of the executive committee members serving.

(3) The executive committee shall appoint a business and science advisory board to include representatives from each research university, the venture capital industry, relevant industry leaders, and the Department of Commerce. The purpose of the advisory board is to advise the board of trustees when requested by it. The advisory board shall ensure that the authority has the input of the research and business communities in implementing its programs and services.

(C) A trustee may not receive a salary for his services as a trustee; however, a trustee must be reimbursed for actual expenses incurred in service to the authority.

(D) The board annually shall submit a report to the General Assembly including information on all acts of the board of trustees together with a financial statement and full information as to the work of the authority.

(E) The board shall hire an executive director of the SCRA who has administrative responsibility for the SCRA. The executive director shall maintain, through a designated agent, accurate and complete books and records of account, custody, and responsibility for the property and funds of the authority and control over the authority bank account. The executive director, with the approval of the board, has the power to appoint officers and employees, to prescribe their duties, and to fix their compensation. The board of trustees shall select a reputable certified public accountant to audit the books of account at least once each year.

(F) Regular meetings of the board of trustees must be held at a time and place the chairman may determine. Special meetings of the board of trustees may be called by the chairman when reasonable notice is given.

HISTORY: 1983 Act No. 50 Section 2, eff April 29, 1983; 1984 Act No. 309, Section 2, eff March 23, 1984; 1991 Act No. 248, Section 6, effective January 1, 1992, and governs only transactions which take place after December 31, 1991; 2002 Act No. 172, Section 2, eff February 8, 2002; 2005 Act No. 133, Section 1, eff June 7, 2005; 2006 Act No. 319, Section 4, eff June 1, 2006; 2007 Act No. 83, Section 7, eff June 19, 2007; 2012 Act No. 209, Section 2, eff June 7, 2012; 2012 Act No. 279, Section 7, eff June 26, 2012.

SECTIONS 13-17-50, 13-17-60. Reserved by 2005 Act No. 133, Section 1, eff June 7, 2005.

#### SECTION 13-17-70. Powers of board of trustees.

The board of trustees has full power and authority to manage the business and affairs of the authority and to take action as it considers advisable, necessary, or convenient in carrying out its powers granted by this chapter and any other law including the following powers:

- (1) to have perpetual succession as a corporation;
- (2) to sue and be sued;
- (3) to adopt, use, and alter a corporate seal;
- (4) to make and amend bylaws for its management consistent with the provisions of this chapter;
- (5) to acquire, purchase, hold, use, improve, lease, mortgage, sell, transfer, and dispose of any property, real, personal, or mixed, or any interest therein;
- (6) to receive contributions, donations, and payments and invest and disperse the authority's funds;
- (7) to construct, operate, and maintain research parks, related facilities, and infrastructure;
- (8) from time to time to borrow money, make and issue negotiable notes, bonds, and other evidences of indebtedness, including refunding and advanced refunding notes, bonds, and other evidences of indebtedness of the authority; to secure the payment of the obligations or any part by mortgage, lien, pledge, or deed of trust, on all or any of its property, contracts, franchises, or revenues, including the proceeds of any refunding and advanced refunding notes, bonds, and other evidences of indebtedness and the investments in which proceeds are invested and the earning on and income therefrom; to invest its monies, including without limitation its revenues and proceeds of the notes, bonds, or other evidences of indebtedness, in obligations of, or obligations the principal of and interest on which are guaranteed by or are fully secured by contracts with the United States of America, in obligations of any agency, instrumentality, or corporation which has been or may hereafter be created by or pursuant to an act of Congress of the United States as an agency, instrumentality, or corporation thereof, in direct and general obligations of the State of South Carolina, and in certificates of deposit issued by any bank, trust company, or national banking association; provided, that the authority, when investing in certificates of deposit, shall invest in certificates of deposit issued by institutions authorized to do business in South Carolina if such institutions offer terms which, in the opinion of the authority, are equal to or better than those offered by other institutions; to make agreements with the purchasers or holders of such notes, bonds, or other evidences of indebtedness or with others in connection with any such notes, bonds, or other evidences of indebtedness, whether issued or to be issued, as the authority shall deem advisable; and in general to provide for the security for the notes, bonds, or other evidences of indebtedness and the rights of the holders thereof; provided, that in the exercise of the powers herein granted to issue advanced refunding notes, bonds, or other evidences of indebtedness the authority may, but shall not be required to, avail itself of or comply with any of the provisions of Sections 11-21-10 to 11-21-80 (Advanced Refunding Act);
- (9) to make bylaws for the management and regulation of its affairs;
- (10) to make contracts and to execute all instruments necessary or convenient for the carrying out of business;
- (11) to delegate authority to any agent or establish any committee in order to accomplish the purposes of the authority;
- (12) to provide guarantees as security for notes, bonds, evidences of indebtedness, or other obligations of affiliates as defined in Section 35-2-201, or of other entities with respect to which the authority has the right to appoint one or more board members, and to mortgage, pledge, hypothecate, or otherwise encumber the property, real, personal, or mixed, or facilities, or revenues of the authority as security for or relating to these guarantees, or for notes, bonds, evidences of indebtedness, or other obligations of the authority; provided, the authority shall have no authority to pledge the credit and the taxing power of the State or any of its political subdivisions;
- (13) to maintain an inventory of research efforts in South Carolina;
- (14) to attract investments in research and development and high technology industries by focusing attention on various educational, cultural, scientific, and economic activities in South Carolina and by assisting potential investors with information requested to determine whether to invest in South Carolina.

HISTORY: 1983 Act No. 50 Section 2, eff April 29, 1983; 1984 Act No. 308, eff March 22, 1984; 2005 Act No. 133, Section 1, eff June 7, 2005; 2012 Act No. 209, Section 3, eff June 7, 2012.

**SECTION 13-17-80.** Board of trustees to exercise power of authority; exceptions; quorum.

The board of trustees shall exercise the powers of the authority except where a power has been given to the executive committee by law or by delegation of authority by the board of trustees. A majority of the aggregate number of the members of the executive committee plus the elected members of the board who are not then serving on the executive committee shall constitute a quorum for the purpose of conducting business. All actions may be taken by a vote of a majority of trustees present unless the bylaws require a larger number.

HISTORY: 1983 Act No. 50 Section 2, eff April 29, 1983; 1991 Act No. 159, Section 1, eff June 12, 1991; 2005 Act No. 133, Section 1, eff June 7, 2005.

**SECTION 13-17-81.** "Research park" defined.

As used in this chapter, "research park" is defined as the Clemson Research Park located in Anderson County, the Carolina Research Park in Columbia, any park developed at Line Street and Hagood Avenue in downtown Charleston, and any park mutually designated by the SCRA and the participating research university.

HISTORY: 2005 Act No. 133, Section 1, eff June 7, 2005.

**SECTION 13-17-83.** South Carolina Research Division to operate research parks in cooperation with other entities.

The South Carolina Research Division (SCRD) may operate existing research parks in cooperation with Clemson University, the Medical University of South Carolina, and the University of South Carolina at Columbia. The authority may establish and operate additional research parks and research, computer and technology-related projects, and facilities as determined by the board of trustees. The authority is responsible for the decisions and operations of a research park, project, or facility established pursuant to this chapter.

HISTORY: 2005 Act No. 133, Section 1, eff June 7, 2005; 2006 Act No. 319, Section 5, eff June 1, 2006.

**SECTION 13-17-85.** Confidentiality.

Negotiations with a prospective industry or business concern considering a research park or South Carolina as a facility site are confidential information and must not be disclosed without the permission of the industry or business concern. Information relating to pending or incomplete research projects is confidential as determined by the board.

HISTORY: 2005 Act No. 133, Section 1, eff June 7, 2005.

**SECTION 13-17-87.** Establishment of Research Innovation Centers; purposes; operation; locations; funding.

(A) The SCRIC shall establish three Research Innovation Centers (innovation centers) in South Carolina. The innovation centers shall:

- (1) enhance the research and technology transition capabilities of the state's three research universities;
- (2) establish a continuing forum to foster greater dialogue between the state's three research universities and industry;
- (3) promote the development of high technology industries and applied research facilities in South Carolina;
- (4) focus their efforts on the development, testing, and implementation of new advances in the life sciences, pharmaceuticals, biotechnology, hydrogen and fuel cells, military and defense technology, chemical products, high tech fibers, advanced materials, automotive, aerospace, and information technology; and
- (5) maximize the use of the funds and activities of the innovation centers for partnerships among the research universities and between the public and private sectors for the purpose of generating professional research and development jobs in South Carolina.

(B) The SCRIC shall operate in conjunction with the three research universities in South Carolina. One innovation center must be located in each of the following areas; except that an innovation center and its activities are not otherwise required to be at a particular location:

- (1) Charleston, to be associated with the Medical University of South Carolina;
- (2) Columbia, to be associated with the University of South Carolina; and
- (3) the Upstate, to be associated with Clemson University.

(C) Each of the three innovation centers may have a center director appointed or removed with the advice and consent of the president of the research university associated with the respective center. Staff for innovation centers should encompass a variety of specialty areas, which may include market research, intellectual property protection, finance, management and business practices, relevant science and technology, industry research partner recruitment, and other specific skills as required to advise and assist start-up companies, pre-company initiatives, or launch new products. Consulting services may be obtained for specialized needs not otherwise met by existing staff personnel.

(D)(1) The SCRIC must be funded by a direct payment of funds by the SCRA for at least the first three years of the centers' existence. The payments must be at least three million dollars for the first year and at least four million dollars for the second year. After the second year, the board of trustees shall determine the method and payment of funds. By the end of the third year, total funding dedicated to the SCRIC for startup must be twelve million dollars; however, the board of trustees may provide a portion of the twelve million dollars with funds generated by other means as determined by the board. Additionally, all remaining vacant land, excluding those parcels mutually agreed upon by the SCRA and the university to which the land is geographically associated, not currently in use by the SCRA for its core mission in the Clemson Research Park in Anderson County and in the Carolina Research Park in Columbia as well as the authority's land located at the intersection of Line Street and Hagood Avenue in downtown Charleston may be dedicated to the benefit of the innovation centers or sold to account for part of the twelve million dollar payment. If the land is not sold, the board of trustees shall determine how best to use this land for the benefit of the innovation centers consistent with the plans of the university to which the land is geographically associated. Any revenue, net of expenses generated from this land, including but not limited to the sale of this land, must be used for the benefit of the innovation centers. If land is offered for sale by the SCRA, it must be offered first to the university associated with the innovation center before it is offered to the public or to another potential buyer.

(2) After the initial three-year period, the State shall explore methods to provide additional funding until the innovation centers have a reasonable opportunity to become self-sustaining. These methods may include direct appropriation from the general fund, private donations, or other funds as necessary.

(3) Notwithstanding the provisions contained in Section 73.18(A) of Part IB of the General Appropriations Bill for fiscal year 2004-2005, or any subsequent appropriations bills or other legislation, the land identified in Section 13-17-87(D)(1) and any additional real property owned or held by SCRA now or in the future must be titled in the name of, and under the control of, the SCRA.

(E) Costs associated with the physical space for the innovation centers including, but not limited to, the costs to acquire, lease, or build the physical space and to up fit the physical space, may be financed through the issuance of general obligation debt to the maximum extent allowed by Chapter 51, Title 11, the South Carolina Research University Infrastructure Act, by private match funding, from the budget of the authority, or by other means; provided, however, that in no event shall there be a pledge of the credit and taxing power of the State or a political subdivision of the State in connection with this financing. The facilities and programs at each site may be tailored to the predominant research focuses of that area. Each may contain wet and dry laboratory space, office space, prototype production facilities, pilot operations,

clean rooms, and other specialized facilities.

(F) The SCRIC may:

- (1) admit qualified companies including, but not limited to, start-up companies, new product initiatives, and pre-company initiatives into a center and grant these companies up to two hundred thousand dollars each as well as physical and staff resources;
- (2) solicit grants and other financial support from federal, local, and private sources and fees, royalties, and other resources from innovation center users, which ultimately should enable the innovation centers to become self-sufficient;
- (3) allow a company to remain in an innovation center for up to four years or until exceeding one million dollars in annual commercial revenue;
- (4) allow rent and fees for services initially to be waived; and
- (5) provide financing to qualified companies.

(G) The SCRIC shall use monetary grants for proof-of-concept studies, Small Business Innovation Research program matches, the protection of intellectual property, and other similar uses. Early support programs must support specialized equipment, facilities, staff assistance, and recruitment for consultants for specific projects. These support programs may be modified quarterly based on the progress of the company or new product.

HISTORY: 2005 Act No. 133, Section 1, eff June 7, 2005; 2006 Act No. 319, Section 6, eff June 1, 2006; 2012 Act No. 209, Section 4, eff June 7, 2012.

**SECTION 13-17-88. Target programs of excellence; Industry Partnership Fund.**

(A) There is established within each of the three South Carolina Research Innovation Centers (SCRIC) established in Section 13-17-87 a target program of excellence reflecting the basic research currently undertaken at each center and serving as the focal point of the state's applied research and development in each of the program areas of excellence:

- (1) The Upstate Innovation Center associated with Clemson University: Automotive Center of Excellence, an automotive technology development program, in collaboration with the University and International Center for Automotive Research (ICAR);
- (2) The Charleston Innovation Center associated with the Medical University of South Carolina: Health Sciences Center of Excellence, a health science technology development program;
- (3) The Columbia Innovation Center associated with the University of South Carolina: Fuel Cell Center of Excellence, a fuel cell and hydrogen technology program, in collaboration with Savannah River National Lab (SRNL); and
- (4) Other programs necessary or appropriate to fulfill the purposes of this section.

(B) The South Carolina Research Authority (SCRA), through the SCRIC, may implement and manage the specified programs and other programs as the SCRA determines in collaboration with the public and private sectors. Additional programs also shall focus on fields in which the State has demonstrated existing or emerging excellence. Program activities are not required to be performed at a particular location. Programs to be conducted pursuant to this section must be approved by the SCRA Executive Committee.

(C) Each target program must coordinate with basic researchers, both inside and outside this State, and with industry so as to focus on and effect applied research, product development, and commercialization efforts in this State in the targeted field of excellence.

(D) A target program of excellence as provided in Section (A) may undertake the following:

- (1) incubation needs for start-ups and spin-offs in the program area;
- (2) demonstration projects and related teams charged with conceptualizing, attracting, and executing technology in the program area;
- (3) working with industry partners to develop collaborative relationships with national and international trade groups, government agencies, research labs, and other universities;
- (4) financing for industry partners conducting activities in furtherance of the program area;
- (5) financing for prototype development, clinical trials, and other program related preproduction projects;
- (6) support for university researchers to work with industry partners on applied research and commercialization in the program area;
- (7) marketing activities including, but not limited to:
  - (a) building national and international recognition of the program;
  - (b) recruiting industries and scientific and entrepreneurial talent to the program;
  - (c) building public awareness;
  - (d) supporting South Carolina based trade shows in South Carolina that attract national and international audiences;
- (8) other activities necessary or appropriate in relation to the programs.

(E) There is established the "Industry Partnership Fund" at the SCRA or at an SCRA-designated affiliate, or both, for the acceptance of contributions for funding the programs. Financing methods pursuant to this section and Section 13-17-87 include grants, loans, investments, and other incentives. The SCRA may, but is not required to, provide additional funding for the programs. Program funding is authorized for the purposes of this section and related administrative costs. A contributor is eligible for a tax credit against the state income or premium tax or license fee, as provided in Section 12-6-3585.

(F) The South Carolina Research Authority (SCRA) may implement the provisions of this section and Section 13-17-87, pursuant to Section 13-17-180.

(G) The SCRA must consult with Clemson University, The Medical University of South Carolina, or the University of South Carolina in the conduct of a program if the program is conducted by an innovation center associated with that research university.

(H) The SCRA shall submit an annual report to the General Assembly on the programs established pursuant to this section.

HISTORY: 2006 Act No. 319, Section 2, eff June 1, 2006.

**SECTION 13-17-89. Prohibition on pledging credit of State.**

A provision of this chapter may not be construed to authorize the SCRA to commit the credit and taxing power of the State. Where the SCRA establishes, controls, funds, supports, or is otherwise involved with a nonprofit entity or appoints some or all of the directors of a nonprofit entity, and this nonprofit entity has established or

establishes a for-profit entity, has acquired or acquires an ownership interest in a for-profit entity, the SCRA shall provide written notice to both this nonprofit entity and this for-profit entity that the SCRA may not pledge the credit and taxing power of the State. A failure to provide this written notice may not be construed to indicate the SCRA may pledge the credit and taxing power of the State.

HISTORY: 2012 Act No. 209, Section 1, eff June 7, 2012.

**SECTION 13-17-90.** Exemption from taxation.

It is found and declared that the project authorized by this chapter is in all respects for the benefit of all the people of the State, for the improvement of their welfare and material prosperity, and is a public purpose and a corporation owned completely by the people of the State. The authority shall pay no taxes or assessments including, but not limited to, income tax, sales and use tax, and property tax upon any of the property acquired by it or upon any of its activities; except that the authority is entitled to the above-referenced sales and use tax exemption only in (1) transactions to obtain tangible personal property for the authority's own use or consumption, (2) transactions related to authority contracts with governmental entities and nonprofit entities, and (3) transactions related to authority contracts with private, for-profit entities doing business in South Carolina, where these contracts do not place these entities in competition with other private, for-profit entities doing business in South Carolina. The securities and other obligations issued by the authority, their transfer, and the income is free from taxation. After payment of necessary operating expenses and all annual debt requirements, the authority shall reinvest net earnings furthering the purposes of this chapter.

HISTORY: 1983 Act No. 50 Section 2, eff April 29, 1983; 1990 Act No. 581, Section 2, eff June 11, 1990; 2005 Act No. 133, Section 1, eff June 7, 2005.

**SECTION 13-17-100.** State not obligated, liable, or responsible.

Nothing contained in the provisions of this chapter, at any time or in any manner, shall involve the credit and taxing power of the State, or of any of its political subdivisions; nor shall any of the securities or other evidences of indebtedness authorized to be issued in and by this chapter ever be or constitute obligations of the State or any of its political subdivisions; nor shall the State or any of its political subdivisions ever be liable or responsible, in any way, for the payment of the principal or interest of or on a security or another evidence of indebtedness.

HISTORY: 1983 Act No. 50 Section 2, eff April 29, 1983; 2005 Act No. 133, Section 1, eff June 7, 2005.

**SECTION 13-17-130.** Assistance to public and private universities.

The authority may assist public and private universities in South Carolina in their efforts to identify and attract nationally prominent academic researchers and professors to accept positions in our schools following established university procedures. This assistance includes coordination of corporate contributions or the provision for direct subsidies to establish professorships and salary supplements competitive in the national markets. The sole determination for hiring resides with the individual institutions.

HISTORY: 1983 Act No. 50 Section 2, eff April 29, 1983; 2005 Act No. 133, Section 1, eff June 7, 2005.

**SECTION 13-17-140.** Identification of common interest areas; promotion of universities.

The authority shall identify subject areas of common interest to the public and private sectors and shall promote the use of South Carolina universities to perform research for private industries.

HISTORY: 1983 Act No. 50 Section 2, eff April 29, 1983; 2005 Act No. 133, Section 1, eff June 7, 2005.

**SECTION 13-17-150.** Establishment of statewide professional research organization.

The authority may establish, in cooperation with the state's colleges and universities, a statewide professional research organization to promote social, professional, and business relationships among researchers in the public and private sectors of the State. The organization established shall conduct regular, regional, and statewide meetings to provide a forum for research presentations and to bring researchers from various industries and universities together to discuss topics of common interest.

HISTORY: 1983 Act No. 50 Section 2, eff April 29, 1983; 2005 Act No. 133, Section 1, eff June 7, 2005.

**SECTION 13-17-160.** Restrictions on authority.

The authority may not interfere in the relationships colleges and universities have established or may establish in the future with industry. The authority may not infringe upon or compete with the rights of faculty members to pursue their own research interests or to secure funding for them. The authority may not inhibit similar scientific activities in the research parks, but the authority may promote individual parks for differing activities of scientific excellence.

HISTORY: 1983 Act No. 50 Section 2, eff April 29, 1983; 2005 Act No. 133, Section 1, eff June 7, 2005.

**SECTION 13-17-170.** Exemption of authority and its employees from certain Code provisions.

The authority and its employees are exempt from the application of Title 8 (Public Officers and Employees), except for Chapter 5 (Nepotism), and Chapter 13 (Ethics and Disclosure), and Title 9 (State Retirement Systems).

HISTORY: 1984 Act No. 309, Section 3, eff March 23, 1984; 2005 Act No. 133, Section 1, eff June 7, 2005.

**SECTION 13-17-180.** Not-for-profit corporations; powers and limitations; annual audit.

The authority is authorized to establish not-for-profit corporations it considers necessary or appropriate to carry out the purposes of this chapter. These corporations have the powers provided to corporations under applicable corporate law including, but not limited to, the ability to establish one or more for-profit or not-for-profit corporations, provided, however, that the for-profit corporations are subject to applicable federal and state taxes, and provided that the for-profit corporations may not compete with any for-profit corporations incorporated in South Carolina. These corporations shall engage an independent accounting firm to conduct an annual audit of their books and records.

HISTORY: 1996 Act No. 308, Section 2, eff upon approval (became law without the Governor's signature on May 7, 1996); 2005 Act No. 133, Section 1, eff June 7, 2005.





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13-51-1.5. Sioux Falls research park. The Board of Regents may provide for the construction, development, maintenance, and operation of a research park on the property in Sioux Falls acquired pursuant to chapter 106 of the 2006 Session Laws. The research park authorized by this section may not occupy more than eighty acres. All limitations imposed by § 13-51-1.3 upon the use of University Center land shall continue in full force and effect with the exception of the separately platted tracts occupied by the research park authorized by this section. Such separately platted tracts shall, instead, be subject to the limitations on the use of research parks stated in this section.

**Source:** SL 2009, ch 93, § 1.

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5-29-1. Legislative findings. The Legislature finds that to increase research and technology- related economic activity in South Dakota and to expand the opportunities for South Dakota faculty members, researchers, and students to participate in the application of research results and technological innovations in commerce, government, or public service, it is critically important to encourage research opportunities and programs within the regental system. To these ends, the Legislature intends that this chapter be construed as authorizing and encouraging coordinated public and private investments in facilities situated on lands controlled by the Board of Regents and designed to support commercial application of research results and technological innovations.

**Source:** SL 2012, ch 46, § 1.

5-29-2. Definitions. Terms as used in this chapter mean:

(1) "Private party lessee or contractor," a business, a nonprofit corporation, or a research park corporation authorized by lease, contract, or agreement with the Board of Regents to construct, finance, operate, maintain, reconstruct, remodel, and manage, at its expense and risk, any research park established pursuant to this chapter;

(2) "Research," an investigation aimed at the discovery of new knowledge to create a new product or service, a new process or technique, or to bring about a significant improvement in an existing product or process;

(3) "Research park," a planned real estate development designed to promote the practical application of university research, to aid the transfer of knowledge, technology, and business skills through collaboration between universities and industry, government, or other organizations that apply research or technology, and to assist in the growth of research-based and technology-led economic development for the community, region, and state, by bringing together universities, institutes, laboratories, businesses, and governmental and other organizations devoted to testing, research, and development activities, to the commercial, governmental, or public policy application of research results or technological innovation, or to the management of research or technology-based enterprises, agencies, or organizations. The term includes such enterprises as may be necessary to support the activities of the primary tenants, their staff, or visitors; and

(4) "Research park corporation," any nonprofit corporation formed pursuant to this chapter and Title 47 for the purpose of constructing, financing, developing, maintaining, and operating a research park.

**Source:** SL 2012, ch 46, § 2.

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5-29-3. Research parks on state lands. The Board of Regents may utilize state lands under its control for the construction, development, maintenance, and operation of research parks.

**Source:** SL 2012, ch 46, § 3.

5-29-4. Accommodation of all kinds of facilities. A research park authorized by this chapter may accommodate all kinds of facilities, laboratories, businesses, or organizations usually found at research parks affiliated with universities.

**Source:** SL 2012, ch 46, § 4.

5-29-5. Lands subject to school and public lands trust. If any lands used for purposes of a research park are determined to be subject to the school and public lands trust established pursuant to S.D. Const., Art. VIII, § 7, then:

(1) A civil, state, religious, or public organization seeking to develop and to operate a research park may make application to the commissioner of school and public lands for conveyance pursuant to § 5-9-34. If the Board of Regents agrees to transfer possession of the land, the commissioner may convey defeasible title as provided in § 5-9-35 for the purpose of operating a research park. Upon any reversion, the land shall once again be placed under the control of the Board of Regents as part of the campus from which it was originally severed; or

(2) The Board of Regents may select other lands under its control of equal value, as determined by the commissioner of school and public lands, and exchange such other lands for those comprising the research park in order to maintain the principal of the school and public lands trust.

**Source:** SL 2012, ch 46, § 5.

5-29-6. Mineral rights. Any mineral rights to state lands on which a research park has been established shall be managed in a manner that does not unreasonably interfere with research park operations.

**Source:** SL 2012, ch 46, § 6; SL 2013, ch 30, § 1.

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Chapter 5-29 5-29-7. Geothermal resources. Notwithstanding any other provision of law, including chapter 5-7, the Board of Regents when approving a research park lease or sublease may lease such portions of the mineral interests reserved to the State of South Dakota in the lands occupied by the research park as may be necessary to permit the research park and its tenants to use geothermal resources for heating or cooling on-site facilities. The mineral interests may be leased on behalf of the State of South Dakota acting by and through the Board of Regents in a manner and upon terms acceptable to the board.

**Source:** SL 2012, ch 46, § 7.

5-29-8. Structures and mineral leases may not disturb use of research park. The commissioner of school and public lands may not authorize the lease of mineral rights if exploitation of such rights would disturb

the use of the research park, nor authorize construction of dams, canals, water ditches, or laterals if such structures would impair the use of the research park.

**Source:** SL 2012, ch 46, § 8.

5-29-9. Authorized agreements. The Board of Regents may enter into any lease, contract, or agreement with a business, a nonprofit corporation, or a research park corporation to permit that entity, at its expense and risk, to construct, finance, maintain, and operate any research park established pursuant to this chapter.

**Source:** SL 2012, ch 46, § 9.

5-29-10. Construction of agreements to permit only authorized uses. No lease, contract, or agreement may be construed to authorize the private party lessee or contractor, or any subtenant, creditor, trustee, receiver, lien holder, heir, assignee, or other party claiming an interest or right through such private party lessee or contractor, to use or to permit the use of the research park for purposes other than those specified in this chapter.

**Source:** SL 2012, ch 46, § 10.

5-29-11. Security for financing. The lease, contract, or agreement may permit the private party lessee or contractor, or other parties claiming an interest or right through them, to pledge for commercially reasonable periods of time such rights of use or occupancy as may be possessed in order to obtain financing. However, no such pledge impairs the reversionary interests of the Board of Regents.

**Source:** SL 2012, ch 46, § 11.

5-29-12. Lease period limit. No lease granted pursuant to this chapter may have a duration exceeding ninety-nine years.

**Source:** SL 2012, ch 46, § 12.

5-29-13. Commercially reasonable performance required--Enforcement and termination. Each lease, contract, or agreement shall contain provisions that require commercially reasonable performance by the private lessee or contractor. Each lease, contract, or agreement shall contain provisions that reserve to the Board of Regents the power to enforce the requirements of this chapter and of any leases, contracts, or agreements issued pursuant to it, which reserved powers shall include the power of termination.

**Source:** SL 2012, ch 46, § 13.

5-29-14. Title to improvements upon termination. Notwithstanding any other provision of law to the contrary, upon termination of any such lease, contract, or agreement, the Board of Regents may take

title to all improvements comprising the research park.

**Source:** SL 2012, ch 46, § 14.

5-29-15. State not liable for research park debts. Nothing in this chapter authorizes the Board of Regents or any entity operating a research park under a lease, contract, or agreement with the Board of Regents to contract a debt on behalf of, or in any way to obligate, the State of South Dakota, or to pledge, assign, or encumber in any way, or to permit the pledging, assigning, or encumbering in any way, of appropriations made by the Legislature of the State of South Dakota. No debt or liability of a research park is an indebtedness, legal or moral, of the State of South Dakota, and no creditor may have recourse against the State of South Dakota or any fund created or maintained directly or indirectly from state taxation.

**S 5-29-16. Formation of research park corporations. The Board of Regents may form one or more research park corporations, separate and apart from the state, to construct, finance, develop, maintain, and operate research parks or economic development initiatives that support the teaching, research, or service mission of the university system by expanding opportunities for South Dakota faculty members, researchers, and students to participate in the application of research results and technological innovations in commerce, government, or public service.**

5-29-17. Board of directors appointed by Board of Regents. Each research park corporation formed pursuant to § 5-29-16 shall be governed by, and all of the corporation's functions, powers, and duties shall be exercised by, a board appointed by the Board of Regents. Each research park corporation shall have the Board of Regents as its sole member. Members of the board may include university presidents, regents, university officers or employees, and other persons selected by the Board of Regents.

**Source:** SL 2012, ch 46, § 17.

5-29-18. Net earnings of research park corporation. No portion of the net earnings realized by any research park corporation formed pursuant to § 5-29-16 may inure to any director or officer of the corporation or to any private entity or individual.

**Source:** SL 2012, ch 46, § 18.

5-29-19. Research park corporation not a public body. No research park corporation formed pursuant to § 5-29-16 may be deemed an agency, public body, or other political subdivision of South Dakota, and no research park corporation formed pursuant to § 5-29-16 may borrow money secured by the State of South Dakota.

**Source:** SL 2012, ch 46, § 19.

**5-29-20. Research park corporation not subject to statutes and rules governing public bodies. No research park corporation formed pursuant to § 5-29-16 is subject to statutes or rules regulating the conduct of public bodies, including those relating to personnel, procurement of goods and services, board meetings, disposition or acquisition of property, capital outlays, per diem and mileage, and inspection of records. Nothing in this section relieves a research park corporation of the obligation to conform to criminal laws or other statutes of general application.**

**Source: SL 2012, ch 46, § 20.**

**5-29-21. Research park corporation to have powers of nonprofit corporation. A research park corporation formed pursuant to § 5-29-16 shall have all rights, powers, and privileges granted to nonprofit corporations pursuant to Title 47 which are necessary and convenient to carry out and to effectuate the provisions of this chapter.**

**Source: SL 2012, ch 46, § 21.**



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## EDUCATION CODE

## TITLE 3. HIGHER EDUCATION

## SUBTITLE F. OTHER COLLEGES AND UNIVERSITIES

## CHAPTER 105. UNIVERSITY OF NORTH TEXAS SYSTEM

## SUBCHAPTER A. GENERAL PROVISIONS

Text of section effective until June 19, 2009, but only if a specific appropriation is provided as described by Acts 2009, 81st Leg., R.S., Ch. 1213, Sec. 6, which states: This Act does not make an appropriation. This Act takes effect only if a specific appropriation for the implementation of the Act is provided in a general appropriations act of the 81st Legislature.

Sec. 105.001. UNIVERSITY OF NORTH TEXAS SYSTEM. The University of North Texas System is composed of:

- (1) the University of North Texas;
- (2) the University of North Texas Health Science Center at Fort Worth; and
- (3) the University of North Texas at Dallas.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Amended by:

Acts 2009, 81st Leg., R.S., Ch. 1213 (S.B. 956), Sec. 1, eff. June 19, 2009.

Text of section effective on June 19, 2009, but only if a specific appropriation is provided as described by Acts 2009, 81st Leg., R.S., Ch. 1213, Sec. 6, which states: This Act does not make an appropriation. This Act takes effect only if a specific appropriation for the implementation of the Act is provided in a general appropriations act of the 81st Legislature.

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- (1) the University of North Texas;

- (2) the University of North Texas Health Science Center at Fort Worth;
- (3) the University of North Texas at Dallas; and
- (4) the University of North Texas at Dallas College of Law.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Amended by:

Acts 2009, 81st Leg., R.S., Ch. 1213 (S.B. 956), Sec. 1, eff. June 19, 2009.

Sec. 105.002. DEFINITIONS. In this chapter:

- (1) "Board" means the board of regents of the University of North Texas System.
- (2) "Health Science Center" means the University of North Texas Health Science Center at Fort Worth.
- (3) "System" means the University of North Texas System including its components and entities.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

#### SUBCHAPTER B. ADMINISTRATIVE PROVISIONS

Sec. 105.051. BOARD OF REGENTS. The organization, control, and management of the University of North Texas System and each component institution of the system is vested in a board of nine regents appointed by the governor and confirmed by the senate.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.052. TERM OF OFFICE; REMOVAL; VACANCY. The term of office of each regent is six years, with the terms of three regents expiring every two years. Members of the board may be removed from office for inefficiency or malfeasance of office. Any vacancy that occurs on the board shall be filled by the governor for the unexpired term.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.053. OATH. Each member of the board shall take the

constitutional oath of office before assuming the duties of his office.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.054. OFFICERS; MEETINGS. The board shall elect a chairman and any other officers it considers necessary. The chairman may convene the board when the chairman considers it expedient to consider any business related to the system.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

#### SUBCHAPTER C. POWERS AND DUTIES OF BOARD

Sec. 105.101. GENERAL POWERS AND DUTIES. (a) The board may direct, govern, operate, support, maintain, manage, and control the system.

(b) The board may:

- (1) erect, equip, maintain, and repair system buildings;
- (2) purchase libraries, furniture, equipment, fuel, and supplies necessary to operate the system;
- (3) employ and discharge personnel, including faculty, to carry out the board's powers and duties;
- (4) adopt rules and policies for the administration of the board's powers and duties;
- (5) in accordance with the rules of the Texas Higher Education Coordinating Board, prescribe for each component institution programs and courses leading to customary degrees as are offered at outstanding American universities and award those degrees, including baccalaureate, master's, and doctoral degrees and their equivalents;
- (6) establish admission standards for each component institution;
- (7) perform other acts that contribute to the development of the system or to the welfare of students of component institutions; and
- (8) delegate a power or assign a duty of the board to an officer, employee, or committee designated by the board.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.102. CHIEF EXECUTIVE OFFICERS. (a) The board shall appoint a chancellor who serves as chief executive officer of the system.

(b) The board shall appoint a president of each component institution who serves as chief executive officer of the institution. The president of the University of North Texas Health Science Center at Fort Worth must be a licensed physician who possesses a doctor of osteopathy degree from an accredited college of osteopathic medicine and must have been licensed to practice medicine in a state of the United States for at least five years.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.103. EMINENT DOMAIN: RESTRICTION. (a) The board may exercise the power of eminent domain to acquire land for the use of the system.

(b) The board must exercise the power of eminent domain in the manner provided by Chapter 21, Property Code, but the board is not required to provide a bond for appeal or a bond for costs.

(c) The board may not use the power of eminent domain to acquire land that is dedicated to a public use by another governmental entity.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.104. DONATIONS, GIFTS, GRANTS, AND ENDOWMENT. (a) From any source, including the federal government, a municipality, a foundation, a trust fund, a corporation, another education agency, or any other person, the board may accept donations, gifts, grants, and endowments of money or property, real or personal, for the system to be held in trust and administered by the board for the purposes and under the direction, limitations, and provisions declared in writing in the donation, gift, grant, or endowment.

(b) The donation, gift, grant, or endowment must be consistent with the laws of this state and with the objectives and proper management of the system.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.105. FUNDS RECEIVED FOR TRUST SERVICES. (a) The board may deposit in an appropriate system account outside the state treasury all funds received as administrative fees or charges for services rendered in the management or administration of a trust estate under the control of the system.

(b) The funds under Subsection (a) may be spent by the board for any educational purpose of the system.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.106. DISBURSEMENT OF FUNDS. (a) Except as otherwise provided by law, the board shall disburse all appropriations to the system.

(b) Except as otherwise provided by law, the board may adopt rules for:

- (1) the disbursal of appropriations and other funds;
- (2) the auditing and approval of system accounts; and
- (3) the issuance of system vouchers and warrants.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.107. SYSTEM PROPERTY. (a) The board has the sole and exclusive management and control of system lands.

(b) The board may acquire by purchase, donation, exchange, condemnation, or otherwise:

(1) land, including improvements, for the use of the system; and

(2) other real property that is necessary or convenient to carry out the purposes of state-supported institutions of higher education.

(c) Except as otherwise provided by law, the board may sell, exchange, lease, or dispose of any land or other real property owned by or acquired for the board or the system.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.108. CONTRACTS. (a) Except as provided by Subsection

(b), a contract with the system must be approved by the board.

(b) The board by rule may delegate to a representative of the board or an employee of the system the authority to negotiate, execute, and approve a contract with the system.

(c) A contract that is not approved in accordance with this section is void.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.109. JOINT APPOINTMENTS. The board may make joint appointments in the component institutions of the system, with the salary of any person who receives a joint appointment to be apportioned to the appointing institution on the basis of services rendered.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

✓ Sec. 105.110. RESEARCH PARK. (a) The board may authorize the establishment of a research park by one or more component institutions of the system.

(b) The administrator of the research park may use private or public entities for scientific and technological research and development in the surrounding region.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

#### SUBCHAPTER D. MISCELLANEOUS ADMINISTRATIVE PROVISIONS

Sec. 105.151. MANDATORY VENUE; SERVICE OF PROCESS. (a) Venue for a suit filed against the system, the board, the University of North Texas, or officers or employees of the University of North Texas is in Denton County.

(b) Venue for a suit filed solely against the health science center or officers or employees of the health science center is in Tarrant County.

(c) Venue for a suit filed solely against the University of North Texas at Dallas or against officers or employees of the University of North Texas at Dallas is in Dallas County.



Text of subsection effective on June 19, 2009, but only if a specific appropriation is provided as described by Acts 2009, 81st Leg., R.S., Ch. 1213, Sec. 6, which states: This Act does not make an appropriation. This Act takes effect only if a specific appropriation for the implementation of the Act is provided in a general appropriations act of the 81st Legislature.

(c-1) Venue for a suit filed solely against the University of North Texas at Dallas College of Law or against officers or employees of the University of North Texas at Dallas College of Law is in Dallas County.

Text of subsection effective until June 19, 2009, but only if a specific appropriation is provided as described by Acts 2009, 81st Leg., R.S., Ch. 1213, Sec. 6, which states: This Act does not make an appropriation. This Act takes effect only if a specific appropriation for the implementation of the Act is provided in a general appropriations act of the 81st Legislature.

(d) In case of a conflict between Subsection (a), (b), or (c) and any other law, Subsection (a), (b), or (c) controls.

Text of subsection effective on June 19, 2009, but only if a specific appropriation is provided as described by Acts 2009, 81st Leg., R.S., Ch. 1213, Sec. 6, which states: This Act does not make an appropriation. This Act takes effect only if a specific appropriation for the implementation of the Act is provided in a general appropriations act of the 81st Legislature.

(d) In case of a conflict between Subsection (a), (b), (c), or (c-1) and any other law, Subsection (a), (b), (c), or (c-1) controls.

(e) Service of citation or other required process must be made on the attorney general and on an individual named by board rule as a representative of the board.

(f) This section does not waive any defense or any immunity to

suit or liability that may be asserted by an entity or other person described by Subsection (a), (b), or (c).

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Amended by:

Acts 2009, 81st Leg., R.S., Ch. 1213 (S.B. 956), Sec. 2, eff. June 19, 2009.

Sec. 105.152. POLICE JURISDICTION. Campus peace officers shall have the same jurisdiction, powers, privileges, and immunities as specified in Section 51.203, Education Code.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.153. DELEGATION OF MUNICIPAL PARKING REGULATION AUTHORITY. (a) By contract between the municipality and the component institution, the governing body of the municipality may delegate to the institution the authority to regulate the parking of vehicles on any public street running through or immediately adjacent to property owned or occupied and controlled by the institution.

(b) The contract may authorize the component institution to assign and regulate parking spaces for its use, to charge and collect a fee from its personnel and students for parking, to prohibit parking, and to charge and collect a fee for removing vehicles parked in violation of law or ordinance or in violation of a rule governing the parking of vehicles adopted by the board.

(c) The contract must be approved by resolution of the board and the governing body of the municipality.

(d) The component institution shall have jurisdiction over property owned or controlled by the institution to the extent that it may:

- (1) assign and regulate parking spaces for its use and charge and collect appropriate fees for parking and improper parking;
- (2) prohibit parking where it considers necessary; and
- (3) set and collect fees for and remove vehicles parked in violation of its rules and regulations or of state law.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.154. CONSTRUCTION OF PROVISIONS REGARDING CAMPUS SECURITY PERSONNEL. Sections 105.152 and 105.153 do not:

(1) limit the police powers of the municipality or its law enforcement jurisdiction;

(2) render a campus peace officer an employee of the municipality or entitle a campus peace officer to compensation from the municipality; or

(3) restrict the power of the component institution under other law to enforce laws, ordinances, or rules regulating traffic or parking.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

#### SUBCHAPTER E. UNIVERSITY OF NORTH TEXAS

Sec. 105.201. DEFINITION. In this subchapter, "university" means the University of North Texas.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.202. UNIVERSITY OF NORTH TEXAS. The University of North Texas is a coeducational institution of higher education located in the city of Denton.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.203. CONTRACTS WITH CITY FOR UTILITY SERVICES. The board may contract with the City of Denton for the furnishing of water and other utility services to the university. The rates to be charged the university may not exceed those regularly established, published, and declared rates for similar customers. If there are no similar customers, the rates to be charged shall be those established by the City of Denton for commercial users. The city may make any adjustments, discounts, and special rates that the governing authorities of the city may consider appropriate to provide for the university.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.204. MENTORING PROGRAM. (a) The board may establish a mentoring program at the university. The program may provide mentoring, tutoring, and other resources to students at all levels of the educational system to assist students to:

(1) succeed in their education and achieve appropriate educational goals; and

(2) prepare for the transition from being a student to becoming an independent adult member of society.

(b) The program may recruit, train, coordinate, and support mentors and tutors and may provide other resources to students in the communities primarily served by the university who are students at risk of dropping out of school, as defined by Section 29.081, or who are otherwise in need of services to assist them in successfully completing their education and becoming productive members of the community.

(c) The board shall establish in connection with the program a continuing study and evaluation of mentoring activities and research into the best practices and methods of mentoring.

(d) At the times determined by the board, the board shall prepare a report relating to the operation of the program. The report must include:

(1) a description of the program;

(2) information relating to the students served by the program;

(3) an analysis of the effects of the program on student performance, including effects on dropout rates, school attendance, grades, performance on assessment tests, graduation rates, and entry into higher education programs;

(4) the costs of the program and the sources of funds used to support the program; and

(5) the board's recommendations for continuing the program and for any changes in the law authorizing the program.

(e) The board may use available institutional funds, as defined by Section 51.009, to support the program. The board may solicit and accept gift, grants, and donations from any public or private source to support the program.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

#### SUBCHAPTER F. STATE HISTORICAL COLLECTION

Sec. 105.251. DESIGNATION. The historical collection of the University of North Texas, consisting of books, documents, stamps, coins, firearms, implements of warfare, relics, heirlooms, and other items of historical importance, is designated as a State Historical Collection, to be known as "The State Historical Collection of the University of North Texas."

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.252. GIFTS AND DONATIONS. The board may accept and receive gifts, donations, and collections of books, documents, stamps, coins, firearms, implements of warfare, relics, heirlooms, and collections of all kinds having historical importance and value, to be used in teaching the youth of this state.

led by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.253. RULES REGARDING GIFTS AND DONATIONS. The board may adopt any rules regarding the receiving and holding of these gifts, donations, and collections that it considers necessary and advisable.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

#### SUBCHAPTER G. TEXAS ACADEMY OF MATHEMATICS AND SCIENCE

Sec. 105.301. ESTABLISHMENT; SCOPE. (a) The Texas Academy of Mathematics and Science is established as a division of the University of North Texas for the following purposes:

(1) to provide an enriched school for gifted and talented high school juniors and seniors to complete their high school education and to attend college courses for credit;

(2) to identify exceptionally gifted and intelligent high school students at the junior and senior levels and offer them a challenging education to maximize their development;

(3) to provide a rigorous academic program emphasizing mathematics and science, but also including a strong and varied humanities curriculum; and

(4) to reduce the shortage of mathematics and science professionals in this state.

(b) The academy is a residential, coeducational institution for selected Texas high school students with interest and potential in mathematics and science under the control and management of the board. Faculty members of the university shall teach all academic classes at the academy.

(c) A student of the academy may attend a college course offered by the university and receive college credit for that course.

(d) The board shall set aside adequate space on the university campus in Denton to be used for the operation of the academy and to carry out the purposes of this subchapter.

(e) The academy is not subject to the provisions of this code, or to the rules of the Texas Education Agency, regulating public schools, except that:

(1) professional employees of the academy are entitled to the limited liability of an employee under Section 22.0511, 22.0512, or 22.052;

(2) a student's attendance at the academy satisfies compulsory school attendance requirements; and

(3) for each student enrolled, the academy is entitled to allotments from the foundation school program under Chapter 42 as if the academy were a school district without a tier one local share for purposes of Section 42.253.

(f) If in any academic year the amount of the allotments under Subsection (e)(3) exceeds the amount of state funds paid to the academy under this section in the fiscal year ending August 31, 2003, the commissioner shall set aside from the total amount of funds to which school districts are entitled under Section 42.253(c) an amount equal to the excess amount and shall distribute that amount to the academy. After deducting the amount set aside and paid to the academy by the commissioner under this subsection, the commissioner shall reduce the amount to which each district is entitled under Section 42.253(c) in the manner described by Section 42.253(h). A determination of the commissioner under this section is final and may

not be appealed.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001; Acts 2003, 78th Leg., ch. 204, Sec. 15.05, eff. Sept. 1, 2003; Acts 2003, 78th Leg., ch. 241, Sec. 1, eff. Sept. 1, 2003; Acts 2003, 78th Leg., ch. 1197, Sec. 6, eff. Sept. 1, 2003.

Sec. 105.302. SUPERVISION BY ADVISORY BOARD. (a) In operating the academy the board shall consider the advice of an advisory board composed of nine members.

(b) Each of the following shall appoint one member to serve on the advisory board:

- (1) the chairman of the State Board of Education;
- (2) the commissioner of higher education;
- (3) the president of the Texas Association of School

Administrators;

(4) the president of the Texas Association for the Gifted and Talented;

- (5) the governor;
- (6) the lieutenant governor; and
- (7) the speaker of the Texas House of Representatives.

(c) The president of the University of North Texas shall appoint two members to the advisory board.

(d) A member of the advisory board serves for a term of six years. If reappointed, a member may serve for more than one term.

(e) A member of the advisory board may not receive compensation for the performance of duties on the advisory board, but a member is entitled to reimbursement for actual and necessary expenses incurred in carrying out official duties from funds appropriated for the academy.

(f) The advisory board shall make recommendations to the dean of the academy concerning the following:

- (1) admission criteria;
- (2) extracurricular activities;
- (3) programs of study;
- (4) rules for the discipline of students and for the management of the academy and academy programs;
- (5) a formula of admission that ensures the admission of

students from the various geographical areas of the state; and  
(6) acceptance of nominations for and the selection of students to be admitted to the academy.

(g) The advisory board shall conduct an annual evaluation of the programs of the academy.

(h) A rule recommended by the advisory board under Subsection (f) shall be consistent with the law and, if adopted, shall be enforced by the staff and faculty of the academy.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001;  
Acts 2003, 78th Leg., ch. 1276, Sec. 6.011, eff. Sept. 1, 2003.

Sec. 105.303. PROGRAM AND OPERATION. (a) The academy shall operate on the same fall and spring semester basis as the University of North Texas. Full-time students of the academy must be enrolled for both the fall and spring semesters.

(b) In addition to academic classes, the academy may offer short courses, workshops, seminars, weekend instructional programs, summer programs, and other innovative programs.

(c) The pupil-teacher ratio in all regular academic classes at the academy may not exceed 30 students for each classroom teacher, except that the pupil-teacher ratio may exceed that limit:

(1) in programs provided under Subsection (b), in physical education courses, or in special enrichment courses; or

(2) if the board determines that a class with more than 30 students for each classroom teacher would contribute to the educational development of the students in the class.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.304. EXTRACURRICULAR ACTIVITIES. The academy may offer any extracurricular activity that a public secondary school could offer. Students attending the academy may participate in all extracurricular activities sanctioned by the university interscholastic league.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.



Sec. 105.305. ELIGIBILITY. (a) Except as provided by Subsection (b), the academy shall admit only high school juniors and seniors.

(b) The academy may provide for an early admission year to allow the admission of a student who is not yet a high school junior if the abilities of the student warrant early entry.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.306. FUNDING. (a) The board is hereby authorized to use available funds or to enter into contracts and accept grants or matching grants for the purpose of establishing an academy of mathematics and science.

(b) Any money received by the academy shall be expended to further the functions and purposes of the academy listed in Section 105.301.

(c) This section does not prevent the board from accepting federal funds or money from any corporation or other private contributor for use in operating or providing programs to the academy.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.307. DEAN. (a) The board may appoint a dean of the academy who shall serve at the pleasure of the board.

(b) The dean shall report to the provost of the University of North Texas and shall have a seat on the council of deans.

(c) The dean shall prepare an annual budget for the operation of the academy and submit the budget to the provost of the university.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.308. LIABILITY. (a) The liability of the state under Chapters 101 and 104, Civil Practice and Remedies Code, is limited for the academy and employees assigned to the academy and acting on behalf of the academy to the same extent that the liability of a school district and an employee of the school district is limited under Sections 22.051 and 22.052 of this code and Section 101.051, Civil Practice and Remedies Code.

(b) An employee assigned to the academy is entitled to representation by the attorney general in a civil suit based on an action or omission of the employee in the course of the employee's employment, limits on liability, and indemnity under Chapters 104 and 108, Civil Practice and Remedies Code.

Amended by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

SUBCHAPTER H. UNIVERSITY OF NORTH TEXAS HEALTH SCIENCE CENTER AT FORT WORTH

Sec. 105.401. UNIVERSITY OF NORTH TEXAS HEALTH SCIENCE CENTER AT FORT WORTH. The University of North Texas Health Science Center at Fort Worth is a coeducational institution of higher education that consists of a college of osteopathic medicine and other programs as prescribed by the board in accordance with the rules of the Texas Higher Education Coordinating Board.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.402. PROHIBITED DEGREES. The board may not award an M.D. degree.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.403. TEACHING HOSPITAL; FACILITIES. (a) A complete teaching hospital for the health science center shall be furnished without cost or expense to the state.

(b) The board shall provide for adequate physical facilities for use by the health science center in its teaching and research programs.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Sec. 105.404. AGREEMENTS WITH OTHER ENTITIES. The board may execute and carry out affiliation or coordinating agreements with any other entity, school, or institution in this state to provide clinical, postgraduate, including internship and residency, or other levels of medical educational work for the health science center.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

#### SUBCHAPTER J. UNIVERSITY OF NORTH TEXAS AT DALLAS

Sec. 105.501. UNIVERSITY OF NORTH TEXAS AT DALLAS. (a) The University of North Texas at Dallas is established as an institution of higher education and component institution of the University of North Texas System in the city of Dallas on property designated by the board.

(b) The board may accept gifts, grants, and donations and may acquire land for the University of North Texas at Dallas.

(c) The board may plan for the development of the University of North Texas at Dallas and for the academic programs offered by the university.

Text of subsection effective until May 23, 2009, but only if a specific appropriation is provided as described by Acts 2009, 81st Leg., R.S., Ch. 129, Sec. 4, which states: This Act does not make an appropriation. This Act takes effect only if a specific appropriation for the implementation of the Act is provided in a general appropriations act of the 81st Legislature.

(d) Notwithstanding any other provision of this subchapter, the University of North Texas at Dallas may operate as a general academic teaching institution with its own chief executive officer, administration, and faculty only after the Texas Higher Education Coordinating Board certifies that enrollment at the University of North Texas System Center at Dallas has reached an enrollment equivalent to 1,000 full-time students for one semester. Until that enrollment level is reached, the board may operate a system center of the University of North Texas in the city of Dallas. Prior to reaching 2,500 full-time equivalent students, the University of North Texas at Dallas may not receive general revenue in excess of the 2003 extended amount with the exception of funding provided through the General Academic Instruction and Operations Formula for semester credit hour increases and the Tuition Revenue Bond debt service for bonds approved in the 78th Legislature. The institution will not be

eligible to receive the small school supplement in the General Academic Instruction and Operations Formula until it reaches 2,500 full-time equivalent student enrollment.

Text of subsection effective on May 23, 2009, but only if a specific appropriation is provided as described by Acts 2009, 81st Leg., R.S., Ch. 129, Sec. 4, which states: This Act does not make an appropriation. This Act takes effect only if a specific appropriation for the implementation of the Act is provided in a general appropriations act of the 81st Legislature.

(d) Notwithstanding any other provision of this subchapter, the University of North Texas at Dallas may operate as a general academic teaching institution with its own chief executive officer, administration, and faculty only after the Texas Higher Education Coordinating Board certifies that enrollment at the University of North Texas System Center at Dallas has reached an enrollment equivalent to 1,000 full-time students for one semester. Until that enrollment level is reached, the board may operate a system center of the University of North Texas in the city of Dallas.

Added by Acts 2001, 77th Leg., ch. 25, Sec. 1, eff. May 2, 2001.

Amended by Acts 2003, 78th Leg., ch. 1266, Sec. 7.01, eff. June 20, 2003. Renumbered from Education Code Sec. 105.451 by Acts 2003, 78th Leg., ch. 1275, Sec. 2(49), eff. Sept. 1, 2003.

Amended by:

Acts 2009, 81st Leg., R.S., Ch. 129 (S.B. 629), Sec. 2, eff. May 23, 2009.

Text of section effective on June 19, 2009, but only if a specific appropriation is provided as described by Acts 2009, 81st Leg., R.S., Ch. 1213, Sec. 6, which states: This Act does not make an appropriation. This Act takes effect only if a specific appropriation for the implementation of the Act is provided in a general appropriations act of the 81st Legislature.

Sec. 105.502. UNIVERSITY OF NORTH TEXAS SYSTEM COLLEGE OF LAW.

(a) The board may establish and operate a school of law in the city

of Dallas as a professional school of the University of North Texas System.

(b) In administering the law school, the board may prescribe courses leading to customary degrees offered at other leading American schools of law and may award those degrees.

(c) Until the University of North Texas at Dallas has been administered as a general academic teaching institution for five years, the board shall administer the law school as a professional school of the system. After that period, the law school shall become a professional school of the University of North Texas at Dallas. Until the law school becomes a professional school of the University of North Texas at Dallas, the law school:

(1) is considered an institution of higher education under Section 61.003 for all purposes under other law; and

(2) is entitled to formula funding as if the law school were a professional school of a general academic teaching institution.

(d) Before the board establishes a law school under this section, but not later than June 1, 2010, the Texas Higher Education Coordinating Board shall prepare a feasibility study to determine the actions the system must take to obtain accreditation of the law school. The Texas Higher Education Coordinating Board shall deliver a copy of the study to the chair of each legislative standing committee or subcommittee with jurisdiction over higher education.

(e) The board may solicit and accept gifts, grants, and donations from any public or private source for the purposes of this section.

Added by Acts 2009, 81st Leg., R.S., Ch. 1213 (S.B. 956), Sec. 3, eff. June 19, 2009.



UTAH





**53B-17-501. Research park authorized.**

The Legislature determines that it is in the public interest of the state of Utah, its citizens, and commerce to develop a research park in Salt Lake County upon property conveyed to the University of Utah under patent from the United States of America dated October 18, 1968.

Enacted by Chapter 167, 1987 General Session

**53B-17-502. Definitions.**

As used in Sections 53B-17-501 through 53B-17-506:

- (1) "Patent" means the patent covering the land acquired by the University of Utah from the United States of America dated October 18, 1968.
- (2) "Research park" means research and development facilities, research institutes, testing laboratories, related business and government installations, and similar facilities, together with land, including all necessary appurtenances, rights, and franchises acquired and developed by the University of Utah which are suitable or necessary to promote the social welfare of the state of Utah through the advancement of education, science, research, economic development, and related purposes. The acquisition and provision of any one or more of the following facilities may be included as part of the development of land for the research park: water, sewage, drainage, street, road, sidewalk, curb, gutter, street lighting, electrical distribution, and docking, but only to the extent that the facilities are incidental to the use of the land as a research park.

**53B-17-503. Administration through nonprofit corporations or foundations -- Control -- Authority of corporations or foundations -- Personnel considered employees of university.**

- (1) The University of Utah may establish, develop, and administer through nonprofit corporations or foundations controlled by the president and the State Board of Regents a research park upon the land acquired by the university under the patent.
- (2) The nonprofit corporations or foundations may receive and administer legislative appropriations, government grants, contracts, and private gifts to carry out their public purposes. ✓
- (3) All salaried employees, agents, officers, faculty, and staff of the nonprofit corporation or foundation are for the purpose of employee benefits, employees, agents, officers, faculty, and staff of the University of Utah. ✓

Enacted by Chapter 167, 1987 General Session

**53B-17-504. Powers of university as related to research park.**

The University of Utah has the following powers:

- (1) to establish, acquire, develop, maintain, and operate a research park, including the acquisition of all necessary or suitable buildings, facilities, and improvements, and to acquire, purchase, construct, reconstruct, improve, remodel, add to, extend, maintain, equip, and furnish the research park or any building or facility, including research and service facilities and areas intended for the common use of the research park tenants;
- (2) to form nonprofit corporations or foundations to aid and assist the University of Utah to attain its charitable, scientific, literary, and educational objectives, including the acquisition, construction, financing, operation, and management of a research park;
- (3) to lease to the nonprofit corporation or foundation all or part of the land and facilities included in the research park upon terms and conditions established by the University of Utah, and to enter into any other contract or agreement with the nonprofit corporation or foundation as necessary for the construction, financing, operation, and management of the research park;
- (4) to lease, either directly or through a nonprofit corporation or foundation, to any person, firm, partnership, or corporation engaged in business for a profit any part or all of the land, buildings, or facilities of the research park under guidelines established by the university;
- (5) to allow a lessee to acquire or construct necessary or suitable buildings, facilities, and improvements upon the leased property. Any improvements acquired or constructed upon the premises during the term of the lease reverts to and becomes the property of the university at the termination of the lease, its renewal, or extension; and
- (6) to finance all or part of the cost of the research park including the purchase, construction, reconstruction, improvement, remodeling, addition to, extension, maintenance, equipment, and furnishing as permitted by law for the financing of self-liquidating projects by institutions of higher education.

Enacted by Chapter 167, 1987 General Session

**53B-17-505. City to provide services and facilities to research park -- Fees and charges -- Disallowance of special improvement district or special taxes.**

- (1) The Salt Lake City Council shall provide police and fire protection and furnish, install, and maintain customary municipal services and facilities for street lighting, traffic control, sidewalks, curb, gutter, drainage, sewage disposal, and water supply to all areas of the research park established upon lands conveyed to the University of Utah under the patent.
- (2) The services and facilities are to be furnished and provided as needed and determined by the State Board of Regents subject to connection fees, use charges, and other service fees customarily

assessed against similar persons, companies, or properties within the territorial limits of Salt Lake City.

- (3) No special improvement district may be created or special taxes imposed with respect to the services and facilities provided under this section.

Enacted by Chapter 167, 1987 General Session

**53B-17-506. Agreements with Department of Transportation regarding research park roads.**

The Department of Transportation may enter into agreements with the University of Utah between regular sessions of the Legislature designating all or part of the roads within or adjacent to the research park as part of the state highway system.

Enacted by Chapter 167, 1987 General Session



VIRGINIA



Code of Virginia

Title 15.2. Counties, Cities and Towns

Chapter 24. Service Districts; Taxes and Assessments for Local Improvements

## § 15.2-2403.2. Virginia Wallops Research Park Leadership Council established.

A. The Virginia Wallops Research Park Leadership Council (the Council) is established as a cooperative management and oversight body to superintend the development and operation of the Wallops Research Park, a service district created pursuant to § 15.2-2400, consisting uniquely and exclusively of adjacent lands being a portion of NASA/Wallops Flight Facility, the Marine Science Consortium, and lands of Accomack County, a political subdivision of the Commonwealth. The purpose of the Council shall be to advise the Governor, state economic development officials, state workforce development officials, and the Wallops Research Park landowners on appropriate development and operations strategies for the Park with emphasis on policy recommendations that will enhance the Park's global competitive advantage in both research and technology-based commercial endeavors.

B. Persons appointed to the Council shall be selected for their knowledge of, background in, or experience with basic and applied research, emerging technologies, workforce development needs of industries, commercialization of the results and outputs of research activities, and the development and financing of technology intensive enterprises.

C. The Council shall consist of six members, all of whom shall serve as ex officio members with voting privileges: the Director of the NASA/Wallops Flight Facility or his designee, who shall retain his absolute duty of loyalty to the federal government; the Director of the U.S. Navy Surface Combat Systems Center or his designee, who shall retain his absolute duty of loyalty to the federal government; the Director of the Marine Science Consortium or his designee, who shall retain his absolute duty of loyalty to the Consortium; the Accomack County Administrator or his designee, who shall retain his absolute duty of loyalty to Accomack County; the Chancellor of the Virginia Community College System or his designee; and the Virginia Secretary of Commerce and Trade, or his designee. All members shall be appointed to serve terms coincident with their terms of office.

D. The Council shall designate one member as its chair, and is authorized to adopt bylaws.

E. A majority of the members of the Council shall constitute a quorum. Council meetings shall be as specified in its bylaws or upon the call of the chair.

F. Members of the Council shall receive no compensation, but shall be entitled to be reimbursed for all reasonable and necessary expenses incurred in the performance of their duties.

G. The Council shall:

1. Undertake studies, gather and analyze information, and make recommendations in order to accomplish its purposes as set forth in subsection A;
2. Apply for, accept, and expend gifts, grants, or donations from public, quasi-public or private sources, and state funds that may be appropriated by the federal government, the General Assembly, or any state government to carry out its purpose;
3. Report annually its findings and recommendations regarding the development and operation of the Wallops Research Park. The Council may make interim reports as it deems advisable; and

4. Assist the Virginia Community College System and Eastern Shore Community College, the lead education and training entities for the Park, in developing the necessary infrastructure to meet the workforce and education needs of the Park to include the development of an Education and Training Center.
- H. Funding necessary to support the Council's work, including but not limited to the reimbursement pursuant to subsection F, shall be provided by Accomack County from the rent revenues generated by the Wallops Research Park.
- I. Accomack County shall provide staff support to the Council. All agencies of the Commonwealth shall assist the Council upon request.

2009, cc. 302, 408.



WASHINGTON



**RCW 28B.10.630****Commercialization of research and other economic development and workforce development opportunities.**

(1) It is the intent of the legislature that state universities engage in the commercialization of research and other economic development and workforce development activities that benefit the intermediate and long-term economic vitality of Washington. State universities are expected to develop and strengthen university-industry relationships through the conduct of research, the support of company formation and job generation, and collaborative training. The state universities, using a collaborative process that may include both in-house resources and independent contractors with necessary technical expertise or innovative processes, must perform one or more of the following functions:

(a) Provide collaborative research and technology transfer opportunities;

(b) Publicize their commercialization processes and include an explanation of how to access commercialization resources at the universities;

(c) Develop mechanisms for pairing researchers, entrepreneurs, and investors. Such mechanisms are to include, but are not limited to, developing guides, web sites, or workshops on funding opportunities, on entrepreneurship and the process of starting a company, and on university-industry relations;

(d) Host events to connect researchers to entrepreneurs, investors, and individuals from the state's technology-based industries; and

(e) Provide opportunities for training undergraduate and graduate students through direct involvement in research and industry interactions.

(2) In carrying out the functions in this section, the universities may work with and through the \*higher education coordinating board.

[2010 1st sp.s. c 14 § 1.]

**Notes:**

\***Reviser's note:** The higher education coordinating board was abolished by 2011 1st sp.s. c 11 § 301, effective July 1, 2012.

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OTHER INFORMATION



microorganisms -- both good and bad -- in different food samples at UNL's Food Processing Center and other labs across the country.

The idea is to understand where potential pathogens and contaminants are coming from, as well as learning more about potentially helpful microorganisms, Benson said.

"That's the discovery aim -- for the first time we can identify organisms that could be beneficial, rather than simply source-tracking the bad guys," he said.

MGA has worked with Lincoln-based Neogen to develop a DNA-sequencing-based diagnostic for the Salmonella bacteria called NeoSeek Salmonella.





CHRONICLE OF HIGHER EDUCATION ARTICLES

THE UNIVERSITY OF CHICAGO

# THE CHRONICLE OF HIGHER EDUCATION

## Administration

April 6, 2015

### Why Universities Alone Aren't Going to Save Your Economy

By Karin Fischer

**E**conomic engine. Powerhouse. Transformative force.

Today, college after college, urban and rural, from the tiniest liberal-arts institution to the sprawling research university, is pitching itself as a driver of economic revitalization, its region's greatest competitive asset. Universities' very presence, the rhetoric seems to suggest, can spur a metamorphosis from decaying factory town to 21st-century knowledge hub.

At a time when the dominant narrative casts the value of college in purely personal terms — an advantage that accrues to the individual graduate — the economic-development pitch comes off as refreshingly retrograde, a throwback. It posits the university as a benefit to the broader community, not just the collegegoer. It's one last go at the public-good case for higher education.



3 Takes on Economic Development

A closer look at the experiences of the University of Pennsylvania, Stanford University, and the University of Rochester.

And no wonder. State budgets have been tight. Hollowed out by the downturn, cities hope to harness every last economic asset. The economic-development argument "answers the question,"

says Leslie Boney, vice president for international, community, and economic engagement at the University of North Carolina system, "what have you done for me lately?"

Or does it? The vision of universities as a causal force in the economic renaissance of cities and towns is an attractive one, no doubt.

Colleges can unquestionably make their communities more desirable places to live. They bring cultural amenities, they hire people, they buy stuff. But economic transformation, that's far more difficult.

After all, Buffalo's not Boston. Akron and Baltimore and all those blighted manufacturing towns still struggle. Despite business incubators and university research parks, no new Silicon Valleys have flowered.

Of the scores of communities in need of economic reincarnation, how many have been born again?

**T**hink about this for a minute: There are more than 3,000 degree-granting four-year colleges in the United States.

While college clusters exist in places like Boston, these institutions are spread throughout the country. Geographic dispersion makes the idea of higher-education-driven economic development appealingly democratic — towns and cities across America should be able to capitalize on local campuses for an economic boost.

In theory.

In hard fact, says D. Bruce Johnstone, a professor emeritus of higher and comparative education at the University at Buffalo, "I don't think that every large city, or even every city with a top-100 research university, is going to make it big." ✓

When you ask Mr. Johnstone, a former chancellor of the State University of New York system, and other experts for examples of places where higher education has been an agent for change in the local economy, they tend to point to just a handful, cities like

Austin, Pittsburgh, and Portland, Ore. One that is often mentioned is Research Triangle Park, near Raleigh, N.C.

Some 60 years ago, the chancellor of North Carolina State University, along with a small group of business and civic leaders, approached the governor with a plan to transition the state from an economic backwater dependent largely on low-paying agricultural jobs. Their idea was that N.C. State, along with nearby Duke University and the University of North Carolina at Chapel Hill, would take the lead, using their research strengths to attract high-tech, high-wage companies to a joint research park.

The strategy worked. Today, per capita income in the Raleigh-Durham area, once 11 percent below the national average, is nearly 3 percent above it. More than half its businesses are in new-line industries like electronics and engineering. The region is recognized as a center for biomedical research and as one of the country's most innovative metropolitan areas.

But rather than suggesting a model for others to follow, Research Triangle Park may be the exception that proves the rule. There's little evidence that big-push policies are broadly successful in harnessing university know-how. Consensus among university, civic, and private-industry partners can be hard to build, and even more difficult to sustain. And to really move the economic needle, such efforts need to be ambitious and bold.

On the contrary, many of the flourishing knowledge-based communities appear to result from happy accidents, more serendipity than intent. There weren't grand plans to create Silicon Valley or San Diego's biotech hub or the high-tech corridor near Washington, D.C.

Take software-dominant Seattle. Its turnaround isn't the result of a considered strategy. Microsoft did not spring from research spun out of the University of Washington. Indeed, the university has arguably become stronger and more competitive as Seattle's technology sector has grown, not the other way around.

No, Seattle can credit its thriving economy to two homesick

twenty-somethings. The Microsoft founders and Seattle natives Bill Gates and Paul Allen just wanted to go back home.

There are a lot of "next" Silicon Valleys. From the Rust Belt to the rural South, everyone, it seems, hopes to replicate the California tech center. When it comes to knowledge-driven economies, Silicon Valley is pretty much the gold standard.

The prevailing story line is that the Valley owes its existence to Stanford University. Add one university, stir. The reality, though, is more complex.

Enrico Moretti, an economics professor at the University of California at Berkeley and the author of *The New Geography of Jobs*, argues that colleges are an important ingredient in the new economy. But Stanford and other institutions are not, he says, in and of themselves sufficient to guarantee growth.

Yes, Stanford faculty and alumni made vital breakthroughs that helped seed the modern high-tech boom. Even more critical, however, is that Stanford existed as part of a broader ecosystem of innovation. There were government grants for basic research and private venture capitalists willing to take a risk on untested technologies. There were companies like Hewlett-Packard and Fairchild Semiconductor that knew how to take a fresh idea and run with it. And in the 1950s and 1960s, when many universities were looking inward, Stanford's leaders deliberately built ties with local companies, starting one of the earliest industrial parks that brought students and the faculty in closer contact with engineers and scientists from the private sector.

"It was engagement," Mr. Moretti says, "that made Stanford successful."

Indeed, a study from the University of California at Merced found that the spillover effect of university research in the surrounding economy is larger if there are companies nearby that are poised to take advantage of that research activity, for example, by more frequently citing university patents in their work. Whether universities and local companies shared a labor pool also

mattered, the researchers found.

"It makes a difference," says Alexander Whalley, an associate professor of economics at Merced and one of the paper's authors, "if the community can absorb the knowledge."

Those linkages are essential. Although the notion of economic development as a calling for colleges dates back to the founding of America's land-grant universities, most institutions simply aren't equipped to turn academic research into economic assets.

Consider the track record: University-related start-ups account for no more than 3 percent of total new business starts each year in the United States, according to estimates by the Massachusetts Institute of Technology's Industrial Performance Center.

Maryann Feldman, a professor of public policy at the University of North Carolina, studies technology-based economic development. Colleges' strengths aren't in commercializing knowledge, but in educating students and in basic research, Ms. Feldman says.

To get knowledge out of the ivory tower, she says, "we need people who can do the translation."

**S**o, you've studied Silicon Valley's playbook. You've taken in the maxims about ecosystems and partnerships. You've got this, right?

Not so fast.

For one, there's a benefit to being first, says Adam B. Jaffe, director of Motu Economic and Public Policy Research, a New Zealand think tank. He's an expert in this stuff.

"It's the Matthew effect," Mr. Jaffe says, referring to what sociologists call the notion of accumulated advantage. "Success breeds success, and scale breeds growth."

In other words, a university with an excellent computer-engineering program could still have a tough time seeding a high-tech cluster. Silicon Valley is well established; it already attracts much of the top talent and companies and capital in the field.

Ditto for biotechnology and its hubs in San Diego and Boston.

It almost didn't turn out that way for Boston. In the 1980s, the city was a giant in computing technology, notes Mr. Jaffe, who spent most of his career there. But the region missed the shift to personal computers and fell behind Silicon Valley.

Boston had something else going for it, though: world-class academic medical centers. Combined with the region's technological expertise, the city was able to reassert itself as a biotech pioneer instead. More recently, that know-how has attracted some of the world's pharmaceutical giants, including GlaxoSmithKline and Johnson & Johnson, to Boston, where they've bought up local biotech companies or set up their own research labs.

Boston could have "flamed out," Mr. Jaffe says, but it didn't.

Other regions haven't been able to pivot as successfully.

For nearly a century, Rochester, N.Y., thrived as a hub for cutting-edge research in optics and imaging. Home to the Eastman Kodak Company, the Google of its day, it was one of the top producers of patents among American cities; workers there earned solid middle-class wages.

All that came to a halt in the 1990s, when digital photography overtook film. Kodak never recovered, filing for bankruptcy in 2012. Rochester's economy hasn't either.

While area universities remain robust research engines, even leaders in the field of optics, they are without a major private-sector partner.

There's a lesson here: When you're gambling on the next big thing, it's hard to predict what's in the cards.

**J**udith Rodin was just weeks into her tenure as president of the University of Pennsylvania in 1994 when a graduate student was shot to death outside his apartment, a few blocks from the university. The robbers made off with the few dollars in his wallet.



Ms. Rodin quickly realized that increasing police patrols and installing more security cameras was not enough (though she did that, too). To solve Penn's crime problem, she believed, the university had to strike at its roots — the poverty and neglect and economic despair of the West Philadelphia community.

"An institution cannot survive and thrive with the neighborhood decaying around it," says Omar Blaik, who worked for Ms. Rodin before founding U3 Ventures, a company that advises colleges and cities on how to harness higher education for economic development.

Over the next decade, Penn embarked on an ambitious community outreach strategy. The university offered employees incentives to buy homes in the area and gave priority to local hires. It directed its purchasing might to hometown businesses. Rundown properties were rehabbed. Wharton School professors mentored aspiring entrepreneurs.

Just before she stepped down as president, in 2004, Ms. Rodin appeared on a radio call-in show. Many callers thanked her. But others had complaints. Among them, why hadn't Penn done more?

Penn's effect on its West Philadelphia neighborhood has been significant. Crime is down; business is up. Families move there so they can send their children to the Penn Alexander School, a university-supported public school that ranks among the best in the city.

But Penn's impact on Philadelphia as a whole is much less clear. The city's unemployment rate of 6.7 percent remains above the national average. Of the 12 largest metropolitan areas in the country, it is the only one that lost jobs in 2014.

Ms. Rodin, now president of the Rockefeller Foundation, says Penn wasn't trying to remake an entire city. Rather, the university sought to work where it could do the most good.

"You need to understand your own resources," Ms. Rodin says, noting that she faced pushback from a faculty concerned that

community engagement was diverting university funds from the core academic mission.

"We took on a neighborhood, and that's critical."

**I**f an institution as well-intentioned — not to mention well-endowed — as Penn can only do so much, what, then, of all these other colleges, with their claims of transformation and turnaround?

Peter McHenry, an assistant professor of economics at the College of William & Mary, has studied college economic-impact statements. Many wouldn't meet the standards universities set for faculty research, he says. His assessment: "Clearly boosterism."

Some studies double count, including, for example, both college payroll and student tuition in expenditure totals. Others employ outrageously inflated multipliers; one report asserted \$26 of economic impact for every \$1 in state spending on higher education, or a 2,600 percent rate of return. Analyses can vary wildly by college: Loyola University in Chicago estimated its local impact at \$1.42 billion; Northwestern University, with a similar student body and double the number of faculty and staff, and less than five miles away, pegged its at just \$145 million.

A recent paper published by the Lincoln Institute of Land Policy looks at efforts by universities, hospitals, and other large nonprofit groups to drive regional economic performance. The authors conclude that many institutions have adopted the language of economic change without fundamentally modifying how they work in communities.

"There was a lot of talk," says George W. McCarthy, president of the research organization and one of the report's authors. "But there was a lot less going on out there than the rhetoric would suggest."

That's not to say colleges couldn't play a greater role in shaping local economies, Mr. McCarthy says, just that it's hard work.



Mark Makela for The Chronicle  
John Fry, president of Drexel U.,  
says economic-outreach efforts  
are too often "feel good"  
exercises that don't result in real  
change.

John A. Fry was one of Ms. Rodin's lieutenants. Now he's trying to replicate Penn's community and economic outreach at nearby Drexel University, where he's been president for four and a half years. He is surprised, he says, that more college leaders haven't also made big plays to help rehab their communities.

Too often, Mr. Fry suggests, university outreach efforts are "feel good" exercises that don't result in substantive change. ✓

*Rural Futures ?*

For others, emphasizing their institution's economic impact may be the best, and the last, gambit to persuade parsimonious legislators to more generously support higher education. Nancy L. Zimpher, chancellor of the State University of New York, has touted the university system as economically indispensable in her campaign to increase state aid. In North Carolina, where relations between public universities and Republican leaders have been cool, a rare budgetary bright spot is \$3-million set aside annually for university research tied to key industries and the state's

economic priorities.

There's also a hunger among civic leaders and elected officials for universities to do more. In many places, the factory floor has fallen quiet, the homegrown mom-and-pop has been swallowed up by a multinational conglomerate, leaving colleges as one of the few steady anchors of the local economy.

In New York, for example, Governor Andrew M. Cuomo has made state colleges the centerpiece of an aggressive bid to reinvigorate the economy there, naming university presidents as co-chairs of each of 10 regional economic-development councils across the state.

It makes sense, after all, in this post-industrial knowledge economy, for universities, institutions that are fundamentally about the generating and sharing of knowledge, to play a larger part.

But counting on colleges to be the economic savior? They may not be the answer to communities' prayers.

*Karin Fischer writes about international education, colleges and the economy, and other issues. She's on Twitter @karinfischer, and her email address is karin.fischer@chronicle.com.*

22 Comments The Chronicle of Higher Education Irdlibrary

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**graddirector** · 2 months ago  
I think the article is confusing two separate issues. One is the building of the local economy vis a vis Silicon Valley, Research Triangle et al. I agree that there are very limited things that the university can do about that due to the need to convince companies to settle in an area. That said, the other side of economic revitalization (mentioned in the Drexel story) is the revitalization of neighborhoods, housing stock, etc that are driven by the economic activity of a university in regard to the buying power of faculty, staff and students. This can be a very powerful force, particularly in smaller college towns where the student body is as large or larger than the year round citizen population. I can think of several college towns in the Northeast where the college partnered with local developers and the city to completely re-do a town filled with abandoned ex-industrial buildings, many covered in graffiti/barbed wire, into an attractive place to live (particularly within close walking distance of the college (Lafayette College's partnership with Easton PA comes to mind as an example), but there are many others....

3 2 1 · Reply · Share ›



**Unemployed\_Northeastern** · graddirector · 2 months ago

A bit OT, but Suffolk had a very, um, *interesting* interested party transaction on its 2011 Form 990. A trustee bought (mortgaged) a nearby office building for about \$70 million, IIRC, and Suffolk agreed to lease the space for \$5 million/year for 20 years, again IIRC. It's been awhile since I looked at that disclosure, but that was the transaction in broad strokes. Of note, Suffolk currently owes between 2x and 3x its endowment in construction bonds, which are rated at a worrying BBB, and it has been so desperate to keep enrollment at its profit-driving law school steady that its median LSAT has dropped ten points in five years. They are also on like their fourth president since 2010.

2 1 · Reply · Share ›



**graddirector** · Unemployed\_Northeastern · 2 months ago

I do not necessarily think such partnerships are a bad thing, not withstanding some potential for abuse. A number of years ago my university partnered with a private developer to demolish a very large, long abandoned (more than 25 years) factory that was directly adjacent to my university, and to build an apartment complex set up for student off campus housing. Part of the deal is that the developer runs the complex and keeps the profits for 20 years, then the land and buildings become university property. This was a big win in three ways. The eyesore of the abandoned factory was removed, and the attractive apartment complex built in its place inspired a redevelopment of the entire area to cater to student needs (restaurants, banks, more housing etc). The university got much needed, high quality housing for its students, the developer made money on the short time horizon of such businesses (20 years) and the university which has a time horizon of centuries will eventually get a piece of land directly adjacent to campus. The city also benefited by an increased tax base as this development ended up greatly increases the value of property in that general vicinity because it was no longer adjacent to a dangerous and dirty, graffiti bedecked eyesore....

2 1 · Reply · Share ›



**mike3077** · 2 months ago

Excellent overview of this complicated and important issue. Higher education might be a much better choice than the all too common strategy of a convention center, stadium or other massive real estate development - but no one strategy yields a "magic solution" to regional economic challenges. Economic competitiveness is more organic and multifaceted. Strengths need to be nurtured across a variety of issues. Education all along the spectrum of early childhood, K-12 and all flavors of post-secondary should be one of the top priorities. But the graduates and the R&D benefits won't stay home unless there are economic and quality of life strengths in your backyard.

1 1 · Reply · Share ›



**willynilly** · 2 months ago

No, universities are not going to save the economy, but they can do their part to help strengthen it.. They need to reign in the annual or almost annual tuition increase glut; and they need to greatly reduce the debt they roll up for their students. Private enterprise is making tons of money off the backs of student debtors - and the universities are (knowingly and unknowingly) co-conspirators in this borrowing scheme.

1 1 · Reply · Share ›



**cwinton** · 2 months ago

It is irresponsible to promote a university as some sort of white knight for riding in to save a faltering economy. It is obvious that a university provides a highly desirable and stable economic component for producing the so-called rising tide

that lifts all boats, but the same can be said for many other economic institutions. The presence or absence of a university might even be the deciding factor for an economic enterprise to locate in a community, but it is never going to be the sole reason, which is what makes the economic impact claims some universities throw around so absurd. What really matters is how a community evolves over time, with the inertial effect of having a sufficient mass within the local populace willing to pursue visionary and entrepreneurial ideas. Where communities are faltering you inevitably find too much of their history is characterized by leadership whose only vision is maintaining the status quo.

1 ^ v • Reply • Share >



**Charlie** • 2 months ago

In my opinion, without a UC campus, Davis, CA would've been indistinguishable from Dixon, CA.

1 ^ v • Reply • Share >



**mkt42** → Charlie • a month ago

One of MIT's presidents, I think it was Charles Vest, made the same observation when Cambridge, MA was complaining about MIT and Harvard occupying much of Cambridge's land without paying taxes. "What would Cambridge be without Harvard and MIT?" he asked rhetorically. "It would be Somerville."

(Somerville is the adjacent town where the grad students tend to live, often called Slummerville by said students, although I hear that it's been undergoing gentrification.)

^ v • Reply • Share >



**botrytisnightingale** • 2 months ago

An interesting piece with some important points buried within it, though far too breezy and condescending to qualify as proper journalism. Also: "Research Triangle Park may be the exception that proves the rule." Exceptions, by their nature, do not prove rules.

^ v • Reply • Share >



**Richard Sherry** → botrytisnightingale • 2 months ago

The idiom, in context, means "tests" the rule. So an exception "tests the rule" and helps us understand the limits of the convention, the "rule."

^ v • Reply • Share >



**pedrog** • 2 months ago

The premise of this article is worthy of continued review and input by other economists, urban planners and business leaders. However, I don't see universities as the leading catalyst for economic development in their immediate community. More often, universities come forth in sustaining or contributing incrementally to the overall positive economic momentum that occurs in their communities by proving a talent pipeline. I witnessed first hand the exciting high tech growth of the Albany NY area with the initial establishment of the College of Nanoscale and Engineering (partly inspired by the huge presence of GE and IBM already in the region) and the subsequent arrival of GlobalFoundries, a leading computer chip manufacturer that hires from each of the top engineering schools that are within 3 hours of Albany.

^ v • Reply • Share >



**Durud Smims** • 2 months ago

Portland, OR would seem to be an economy that had little impact from higher ed. Reporter had a thesis and went out to prove it, not the other way around. Article sucks if you ask me.

^ v • Reply • Share >



**mkt42** → Durud Smims • a month ago

I too was puzzled by the mention of Portland. Having grown up in Seattle

(where the Univ of Washington is located) and now working in Portland (which lacks the flagship public university, which is hours south in Eugene, and instead has an urban commuter campus, Portland State Univ), I can see the synergy that a major metropolitan area and a research university can have -- and how that synergy can be missing.

The UW produces huge amounts of research and even a handful of Nobel prizewinners. Portland State can't do that -- and neither can the Univ of Oregon, being located in an isolated college town. The state of Oregon made a big mistake locating its flagship university away from its major metropolis.

So I don't see a higher education institution in Portland having the effect that Stanford/Berkeley, MIT/Harvard, CMU/Pitt, or even the UW have had on their metro areas. Reed College does it's thing, and is good at it, but it's too small and too undergraduate oriented to have a big or even medium effect on Portland's economy.

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**larkey** • 2 months ago

Of course universities are not a panacea for urban economic development. Who argues that they are? One early and sophisticated argument is found in the work of another Fischer: The Stupidity Problem and Other Harassments, John Fischer, who wrote a marvelous Armchair column in Harper's in the early 1960s. He looked at the miracle of Route 128 in Boston and its relationships with the universities, especially MIT and Harvard.

This article fails to sort out the many town/gown examples in the US with any rigor.

In some instances the university is the town in the sense that it is responsible for much of the economic activity, primary, secondary and tertiary in the jargon of the economic development folks. Think about Ann Arbor, Madison, and Berkeley without their universities.

Some governors touting austerity in higher education and an ascending vocational focus for anything the public funds from taxes are running a partial version of this experiment. If they push hard enough these pols may succeed in turning great ~~public universities into junior colleges busily issuing certificates and degrees to~~

[see more](#)

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**noeltomas** → **larkey** • 2 months ago

Can you provide a citation for your Ronald Reagan quote? Thanks.

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**Unemployed\_Northeastern** → **noeltomas** • 2 months ago

"The state should not subsidize intellectual curiosity," said Ronald Reagan, back when he was running for governor of California. "<http://www.npr.org/blogs/ed/20...>, among an avalanche of other results when googling Reagan and that quote.

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**larkey** → **noeltomas** • 2 months ago

One of many:

[http://www.newfoundations.com/...](http://www.newfoundations.com/)

There is a hagiography by two psychologists who were advising Reagan in that gubernatorial campaign that discusses how they helped him recover from that rhetorical slip.

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**Unemployed\_Northeastern** • larkey • 2 months ago

Kendall Square and the rest of Cambridge surrounding MIT is an ever-expanding beehive of biotech and pharmaceutical R&D facilities and headquarters, significant offices for major tech companies, incubator space for start-ups, venture capitalists' offices, new apartments and restaurants to house and feed all of the new workers, etc. In the absence of MIT and other universities, it is hard to imagine all of this occurring. And 128 is so crowded that corporations have spilled over onto Routes 495, 3, 9, the Mass Pike, etc.

^ v • Reply • Share >



**msumenglish** • 2 months ago

Universities can have a part to play if they hire faculty instead of administrators. Recent reports indicate that administrators clone themselves, praise each other, and pad their salaries while reducing tenured faculty and hiring adjuncts. That's not a strategy. It's a corruption. It needs to be stopped.

^ v • Reply • Share >



**11134078** • 2 months ago

Take the following stats about Rochester, NY (from Wikipedia and based on the 1910 census and hence the past tense): "The median income for a city household was \$27,123, and the median family income was \$31,257. Males had a median income of \$30,521, versus \$25,139 for females. The per capita income for the city was \$15,588. About 23.4% of families and 25.9% of the population were below the poverty line, including 37.5% of those under age 18 and 15.4% of those age 65 or over." These days Kodak is keeping alive mostly by selling or licensing its patents and it has a CEO who lives in California and is reported never to have met the mayor of Rochester. Can the University of Rochester save a city in this condition? Can it be what Kodak, Bausch and Lomb, Xerox used to be to Rochester? Of course not. Looking to universities to directly solve major societal problems is folly. Universities are (or should be) in the business of educating minds; this must continue to be their major though perhaps somewhat indirect contribution to society. (And when they clean up their immediate neighborhoods one of the main results is often pushing poor people out of their homes.)

^ v • Reply • Share >



**neurojoe** • 2 months ago

They may not grow the economy, but universities can at least help maintain the status quo. Without the Colleges of Worcester consortium, and specifically UMASS Med as a major employer, Worcester MA would be in deep(er) trouble economically and socially.

^ v • Reply • Share >



**ian-ink** • a month ago

Higher education doesn't raise the local economic landscape primarily by proximity. The greatest economic fruits of higher education are the minds they develop. Without a place for these "seeds" to take hold, they will go elsewhere.

A college can be a considerate neighbor, but the local community must make a good argument as to why graduates and employees should consider the area as a rewarding choice to stay and prosper. Otherwise, a university is perceived as manipulating the locality for its own means, effectively alienating the surrounding community who can't be associated economically with its mission.

How will a community attract the prosperity(or economic potential) of a college's graduates when a majority don't want to live there either? Each city or town must prime the "business pump" before their local college can serve as a true economic impetus.

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# THE CHRONICLE OF HIGHER EDUCATION

## Administration



October 21, 2014

## Seeking Hip Worker Environs, Universities Remake Research Parks

*By Paul Basken*

Research Triangle Park, N.C.

Research Triangle Park, the king of university-affiliated business development, is 11 square miles of North Carolina pine forest laced with blue-chip tenants that include IBM, Monsanto, Cisco Systems, and Dupont.

Its companies have landed more than 3,200 patents and registered more than 1,900 trademarks, with popular discoveries that include artificial turf, the product bar code, and the cancer drug Taxol. Over 55 years, Research Triangle Park, referred to here as RTP, has become an undisputed economic success, spawning imitators and challengers all over the country.

Yet from his gleaming glass-and-brick headquarters in the middle of it all, the park's director, Robert T. Geolas, is troubled by an increasingly glaring absence: He can't just walk outside to get a cup of coffee.

"We're half the size of the island of Manhattan, and you can't buy a Starbucks coffee anywhere in RTP," said Mr. Geolas, who arrived in 2011. "It's amazing."

It's not because he needs the caffeine.

Instead, it's an atmosphere of inventive collaboration that Mr. Geolas wants badly to promote. A recent internal strategy document stated it plainly: For all its storied accomplishments, Research Triangle Park faces an urgent need to change, largely because of a sprawling suburban-style layout that attracts big established companies but has nurtured relatively few start-ups.

Mr. Geolas is not alone. Many of the nation's university-affiliated

research parks were built on open land miles from cities and campuses. And now, whether owned by the universities or, like Research Triangle Park, by regional partnerships, many recognize a pressing need to spend heavily to reconfigure themselves, finding that sustained economic growth depends as much on quality-of-life factors as on raw scientific firepower.

A recent survey for the Association of University Research Parks made clear the sentiment. More than 100 North American parks responded, with many outlining plans to soon add retail shops, restaurants, and housing to their developments. ✓ Altogether, the number of parks offering "live-work-play environments" was expected to more than triple, from 6 percent to 21 percent, within five years, the survey found.

In many cases, that means a huge overhaul. Along with the costs—as much as \$2-billion in the case of Research Triangle Park—the parks and their universities can face a variety of challenges, including finding available land near the campus, getting the right mix of potential nonacademic distractions, and keeping their educational missions clear.

### **More Than Research**

With 38,000 workers at more than 170 companies in 22 million square feet of buildings over 7,000 acres, Research Triangle Park is the largest research park in North America. And RTP isn't just about its big corporate campuses—it has five buildings devoted to start-up ventures, and 60 percent of its companies have 20 employees or fewer. But today's entrepreneurs, Mr. Geolas said in an interview, want more-inclusive settings where they can meet with one another, share ideas, find new workers, and just enjoy themselves.

For inspiration, Mr. Geolas has visited leading places of commercial innovation around the country, including Silicon Valley and Boston. But he also recognizes worthwhile examples nearby. Down the road, in downtown Durham, N.C., the abandoned remnants of a once-mighty tobacco industry have experienced a high-tech revival over the past decade. The showcase example is the longtime home of the American Tobacco

Company—several blocks of century-old brick factories that have been transformed into an entrepreneurial playground of offices, apartments, restaurants, retail stores, and meeting spaces.

The epitome of urban and trendy, the American Tobacco Campus development features interiors of open atriums, sleek metal framing, and exposed wooden beams. It has an outdoor amphitheater, tree-lined pedestrian pathways, and a quarter-mile-long cascading waterway that leads to the newly rebuilt home field of minor-league baseball's iconic Durham Bulls.

Duke University, recognizing its deep stake in the health of downtown Durham, has made itself essential to the success of the American Tobacco Campus, said one of the project's founders, Michael J. Goodman. Duke relocated offices from its campus to provide a base of tenants in the project's founding days of 2004, then essentially shrank or expanded its rental presence as needed in the following years to ensure that the development survived and then thrived, Mr. Goodman said.

At first, the university had to recruit Duke workers for the site, said Scott F. Selig, the university's associate vice president for capital assets and real estate. Now, even researchers with labs on the campus want to be downtown, attracted by greater lunch options and a hipper vibe, Mr. Selig said.

"We have more people asking to come downtown than we do asking to go back to campus, by far," he said. "I don't have to pick up the phone anymore—they're generally calling me."

Young companies that have set up shop at the American Tobacco Campus certainly understand that. One, a computer-services company called Smashing Boxes, began four years ago with eight employees in a basement-level section of the project known as American Underground that is reserved for small start-ups. It now has 50 employees and recently moved upstairs and across the street into a more-traditional office location in the project.

Smashing Boxes workers are mostly in their 20s and 30s, and the attractiveness of the development was central in luring many of

them, said a company co-founder, Nick Jordan, a graduate of the University of North Carolina at Chapel Hill.

Another fledgling tenant, Oncoscope, the maker of a optical biopsy device for diagnosing cancers, was struggling to survive in 2009 when it hired an experienced corporate manager, Perry A. Genova, to help turn it around. Mr. Genova took exploratory steps toward moving the company out near Research Triangle Park, where rents were about half the \$26-per-square-foot price at the American Tobacco Campus.

But after six months, Mr. Genova said he realized the overriding value of the Durham location, especially given his decision to essentially clean house and find new talent to run the company.

"We knew we were going to be recruiting people," he said, "and we wanted to be sure that they didn't look at our location and say, 'Well, I'll stay where I'm at.'"

Mr. Genova, who is also a graduate of UNC-Chapel Hill, said he remembered Durham a decade ago as a place that people avoided. Now, the attractions include a weekly gathering with his Oncoscope team at a local pub that features selections from a different brewery every Wednesday night. The gatherings serve as a rich opportunity to exchange ideas with industry colleagues. "There's so many elements to this, and benefits to this location, that they're hard to enumerate," he said.

### **Rebooting a Brand**

Back at RTP, Mr. Geolas knows that very well. With a 3-percent vacancy rate and \$1-billion in investments over the past five years, Research Triangle Park "is still a very successful brand," he said. "But the reality is that, as successful as that brand is, it's probably more recognizable among people who are 45, 50, 55, 65 years old than it is among people who are 25 years old."

Its initial redevelopment plans, outlined this month, suggest an ambitious strategy. The first round of the expansion, known collectively as Park Center, will begin next year and run at least three years. The result will be a mix of shops, restaurants, and residential developments, essentially creating a town of some

4,000 people.

A fan of Walt Disney, Mr. Geolas draws comparisons to the cartoonist's original concept of his Epcot project, which was to have been a prototype city where companies could experiment with innovations in urban life. The Park Center project will be led by the London-based developer Gerald D. Hines and will include Mary Margaret Jones, a landscape architect known for the High Line, in Manhattan, and Stanton Eckstut, an architect whose work includes Battery Park City, also in New York City.

The Epcot vision might even prove more realistic at Research Triangle Park than at Disney's development, Mr. Geolas argued, given all the technological pioneers already located there.

Mr. Geolas also anticipates expanded participation by the park's partner universities. North Carolina State University is discussing the creation of a design studio at the site, and Duke is considering a venue for reimagining the workings of health-care systems.

Still, as badly as Research Triangle Park needs to update its physical space, Mr. Geolas describes the overriding goal as the improvement of RTP's "collaborative" profile. To that end, the Park Center expansion includes the creation of a "Convergence Center" for finding areas of common ground between scientific technology and the humanities, and for connecting urban and rural communities. A key feature, he said, will be a communications network for more extensively sharing discoveries with communities across North Carolina that are also seeking economic growth through technological advancement.

Then there's the financing. The park was founded 55 years ago by a partnership of public and private donors, and operates as a structure separate from the universities. It now has assets of about \$200-million in cash and land value, and expects much of the new construction to be financed by investors in the property.

That scale of reinvention may be difficult for many university-affiliated research parks across the country to emulate. The association's survey found that about half of the parks have an

operating budget of less than \$1-million, meaning major initiatives often require outside financial help.

Given the economic benefits of such parks—it's estimated they generate nearly one million jobs across North America—the association has been pressing Congress for legislation that would provide planning grants and loan guarantees to build research parks and technology incubators. The failure to act is another example of the United States' losing ground in the science-based global economy to competitors in China, India, and the Middle East that are rapidly building such facilities, the association has argued.

Within American cities, however, operators of research parks largely describe the alternative models—including many now being built by cities in downtown areas without any university affiliation—as helpful rather than competitive.

Concerns about too much competition within a city or a region can be heard at times, said Bruce A. Wright, an associate vice president at the University of Arizona and director of its Tech Parks Arizona developments.

But some types of work—such as, in Arizona's case, solar-power and electrical-grid testing and some defense-related sensor technologies—simply require large open spaces, Mr. Wright said. Many other types of research-related work, often in fields such as health care and computer-related applications, can be located in smaller-scale urban settings, he said.

"We need a whole series of different places to do these kinds of things," said Mr. Wright, a past president of the Association of University Research Parks. His office operates a 1,300-acre suburban research park several miles from the university while building an alternative closer to the campus. As does Mr. Geolas, Mr. Wright said he recognizes that the traditional research park "is no longer sufficient" for the way many people now like to live. ✓

### **Hidden Dangers?**

Mr. Geolas has experience managing the kind of service mix he hopes to bring to RTP. A decade ago he led a project out of North

Carolina State University called the Centennial Campus, one of the nation's first efforts to combine a research park with student dormitories, nonstudent housing, and other trappings of urban life.

Covering two square miles, the Centennial Campus has three apartment complexes, a lake, a fishing pier, and a golf course. That's along with some 60 corporate tenants and more than 70 academic departments, including most of N.C. State's College of Engineering.

For its part, N.C. State doesn't see a residential-based expansion of Research Triangle Park as a threat to the Centennial Campus, said Terri L. Lomax, the university's vice chancellor for research, innovation, and economic development. "Amazing, it seems to be infinite," Ms. Lomax said of the area's growth in research-based industry. "You would think at some point it's going to saturate, and it doesn't seem to."

But even the unambiguous success of models such as the American Tobacco Campus can raise worries. The current chief executive officer of the Association of University Research Parks, Eileen Walker, said she is certainly impressed by the creative reuse of old urban downtowns, including the tobacco factories in Durham and other North Carolina cities.

But in carefully chosen words, she mused about a future in which cities strive to create metropolitan playgrounds for Angry Birds developers, and gently sketched out a fear that the overeager pursuit of such islands of application-driven creativity might hollow out the core scientific competencies that made American research universities into world leaders.

"We need to just be circumspect," she said. "I mean, we love ballgames, and that's super, and everybody loves to be entertained when they get off work. But at the end of the day, we have to make sure that the whole purpose of a university, and the purpose of university research parks, which support the missions of universities—that basic research needs to be respected."

6 Comments

The Chronicle of Higher Education

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**happyprof** · 7 months ago

Research parks and business incubators funded by universities are so... 1998, bro.

3 ^ ▾ · Reply · Share >



**Guest** · 7 months ago

These things are nearly always boondoggles in which trustees gift contracts to politically-entrenched local developers at tax-payers' expense. The public good is only the justification, not the motivation. The true motivation is always financial benefit for the developers and their tools on the university board.

1 ^ ▾ · Reply · Share >

**elgato1204** ↗ Guest · 7 months ago

This is a pretty sweeping statement. Can you point us to the data that show this, which I assume you have? If it's "always" true, the data should be pretty clear.

^ ▾ · Reply · Share >



**Guest** ↗ elgato1204 · 7 months ago

There is a huge literature on local politics, and how it is captured by local developers in all but a few cities in the US. It's hardly a secret. Were you under the impression that public university trustees are altruistic saints motivated by nothing more than community service?

^ ▾ · Reply · Share >

**jsummer** · 7 months ago

The final sentence is truly interesting - suggesting that the purpose and mission of a university is basic research. I thought that the mission and purpose was really education and that research is a vehicle through which you teach and train. New knowledge creation by the faculty or the students - which is the real mission of the university? (I do recognize that different universities have different missions, but...)

^ ▾ · Reply · Share >



**Guest** ↗ jsummer · 7 months ago

It's research. Students come to learn from the experts. How do you think they got to be experts?

1 ^ ▾ · Reply · Share >

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# THE CHRONICLE OF HIGHER EDUCATION Administration

include

May 8, 2011

## The Research Drain

As universities ante up more of their own money, many still slip in federal science ranking

*By Robin Wilson and Jeffrey Brainard*

At a time when earning a berth among the country's elite research universities is more competitive than ever, many institutions have tried to improve their edge by spending more of their own money but have failed to see a payoff.

An analysis by The Chronicle of the 100 universities receiving the most federal research dollars in 1999 found that 27 of them at least doubled their own spending on research over the following decade, yet nearly half of those fell in the federal ranking.

Among those taking a dive were the State University of New York at Stony Brook, the University of Utah, and the New Mexico State University system, which together jacked up their own research spending by a combined \$156.8-million compared with inflation-adjusted 1999 levels. The closely watched ranking of federal dollars for scientific and engineering research, compiled annually by the National Science Foundation, is a marker of institutional research prowess and prestige and can help the highest-scoring universities attract the best professors and graduate students.

Research spending is also a primary way by which universities are evaluated for acceptance into prestigious organizations like the Association of American Universities. The AAU, which represents 62 leading research institutions in North America, just dropped the University of Nebraska at Lincoln from its membership rolls after deciding that the institution no longer met its standards, and Syracuse University is expected to leave voluntarily for the same reason in the coming months.

The Chronicle analysis of NSF data found similar results for institutions ranked in the second tier of research universities.

Nearly 40 institutions ranked between 101 and 200 in 1999 at least doubled their institutional spending on research over the past decade, but almost half of those fell in federal rank.

Scholars who study higher-education policy say the analysis shows that too many universities are trying to expand their research missions without developing smart enough strategies to capitalize on what they're spending. The findings also pose questions about whether the country needs so many research universities and if in their quest to boost their rankings, institutions are shortchanging other campus priorities. ✓

"A lot of institutions that have made this bet have lost," said Jane V. Wellman, executive director of the Delta Project on Postsecondary Education Costs, Productivity, and Accountability. "People who think about research strategies are starting to say: We're not improving anything other than running harder for less money."

### **Spending More to Get More**

The Chronicle's analysis comes as higher education is footing an ever-growing proportion of the country's bill for scholarly work. Over the past four decades, universities have seen their share of the country's overall spending on research rise from 10 percent to 20 percent. Institutional spending on research reached \$11.2-billion in 2009, an increase of 44 percent since 2004 after adjusting for inflation. Financing from all external sources rose only 23 percent, The Chronicle's examination found.

Universities report the amount of their own institutional research expenditures to the NSF but do not say where they got the money or where it went. In fact, some administrators interviewed by The Chronicle were unsure how their total research receipts and expenditures stacked up.

"Funds come from so many different sources through so many different decision-making processes that it's hard to compile all of it," said David L. Wynes, Emory University's vice president for research administration.

Conversations with administrators at several top research universities show that the internal money universities spend on research typically comes from a limited number of sources, including medical-center receipts, endowments—many of which grew exponentially with the economic boom of the last decade—payments the federal government gives institutions for the "indirect" costs of doing research, and—some say—from students, through tuition. Ironically, success in landing more outside federal research funds usually forces most universities to dig deeper into their own pockets, a dynamic that may have driven some of the reported increase in institutional research spending.

Many universities have long complained that federal grants do not adequately cover their overhead costs, that is, the costs of administering the research and of constructing and operating laboratories. The federal government partly reimburses those costs but has long capped reimbursements for administration, even while it has increased regulations on academic research.

The State University of New York's Stony Brook campus illustrates how a university's federal ranking can decline even as it pours more of its own money into research. According to what Stony Brook reported to the NSF, it boosted its own spending to \$113.8-million in 2009 from \$49.5-million, the inflation-adjusted level in 1999, an increase of 130 percent. But the \$107.4-million in federal research money expended by Stony Brook in 2009 represented an 11-percent drop in inflation-adjusted terms, The Chronicle found. The university plummeted in the ranking of federal research money, from 53 to 97.

"Look, it's always bad when federal money declines, because that's the biggest pocket," said John H. Marburger III, a past president of SUNY at Stony Brook who served as science adviser to President George W. Bush and is now Stony Brook's vice president for research. As its federal funds have declined, said Mr. Marburger, the campus has concentrated on attracting more research money from corporations and state partnerships. (See related article on Page A4.)

The University of Utah's spending of internal funds on research

also shot up over the past decade, rising to \$104.1-million in 2009, an increase of 256 percent after inflation. And while the university saw its federal funds for research rise by 33 percent, that wasn't enough to maintain its position on the list of institutions receiving the most federal research dollars; Utah fell from 44 to 56.

Thomas N. Parks, vice president for research, said the university hasn't been able to tap in to many sources of research money besides the federal government. "We don't have a lot of big industrial companies doing research," he says. "We don't have a lot of endowment, so we are underinvested in research infrastructure."

While the university saw a rise in federal research money, it can expand that by only so much, said Mr. Parks. Utah increased its full-time faculty between 1999 and 2009 by just 10 percent, which is less than what most other top research universities did.

"At some point, the people we have are maxed out in terms of the research dollars they can bring in and what they can handle," he said. "Other schools have gotten more money because they have grown their faculties by more than we have."

Mr. Parks said all of the extra internal money that Utah spent on research came from funds the federal government gave the institution as reimbursement for the indirect costs of pursuing federal projects. (Those reimbursements include, for example, the university's costs in previous years to construct research laboratories.) The university simply turned that money back into general support for research—primarily for things like animal care, computing services, graduate students' tuition stipends, and operating research facilities, said Mr. Parks.

"We haven't been able to take millions and millions and put them into a few big new research initiatives on the campus."

Vanderbilt University, on the other hand, has done just that. By raising its own spending on research by 192 percent over the decade The Chronicle observed, to \$55.9-million, the university has transformed its scholarly profile, said Dennis G. Hall,

Vanderbilt's vice provost for research. The university saw a 123-percent increase in federal funds and zoomed up the federal rankings, from 42 to 24.

Mr. Hall said the key to Vanderbilt's success was its coordinated effort to ramp up its research endeavors. In 2000 it cashed out a \$100-million discretionary endowment fund and, over 10 years, it invested the money in a variety of new research programs in science, engineering, the humanities, and education.

"The deans here decided to lock arms and march in the same direction and build the strength of graduate education and research across the board," said Mr. Hall. "This is a matter of careful study and choosing wisely."

### Where the Money Comes From

While putting institutional money into research may pay off for some institutions, experts on higher-education finances question what else gives when research spending is a top priority.

"In general, universities lose money on research, and there are allegations—though people don't want to make it public—that undergraduate tuition is partially covering the cost of research," said Ronald G. Ehrenberg, director of Cornell University's Higher Education Research Institute. In a study published in 2007, Mr. Ehrenberg found a correlation between research spending and higher tuition. Institutions that expanded their own research spending the most, he found, were more likely than their peers to increase their student-faculty ratio, to substitute lecturers for tenured professors, and to raise tuition by a greater amount.

The effects of increased spending were small, though, adding only about \$300 to tuition at private research institutions and almost nothing to public tuitions, for example.

None of the institutions The Chronicle spoke to said they had used tuition checks to pay for research. Indeed, most said the amount they charged students didn't even cover the full cost of education. But Mr. Ehrenberg and others said tuition subsidizes research in hidden ways. Faculty members at research universities teach fewer

courses per semester than their counterparts at teaching colleges, on the theory that they use the extra time to keep up with their fields—something that improves both their teaching and their research. But that so-called release time is counted as an "instructional expenditure" by the federal government. That means some of the funds classified as instruction actually are used to support faculty research, said Mr. Ehrenberg.

"This is really the major institutional investment in research, but it is deeply hidden," said Mark S. Schneider, a vice president at the American Institutes for Research. "If you go to a state legislator and say, How much is the state putting into academic research?, they will say, Oh, we don't have a research budget. But you'll say: Do you know your faculty at research institutions teach only two courses a semester, so you are subsidizing 50 percent of their time which is being spent on research?"

James J. Duderstadt, president emeritus at the University of Michigan and a university professor of science and engineering there, said many institutions are trying to buy research prominence, but that comes at a price. "You dig yourself in a hole by accepting grants that require that you then heavily subsidize them by other missions of your institution," he says. "They are essentially robbing Peter to pay Paul."

That isn't likely to end soon, as the prestige of both faculty members and university leaders is tied to research success. "Let's say someone is a provost at a second- or third-tier institution, and he or she wants to move up," said William G. Tierney, director of the Center for Higher Education Policy Analysis at the University of Southern California. "The way you move up is to say: 'While I was provost, I doubled the research at my university.' And we go: Oh, my. He doubled the research funding at his university. And the board goes: Wow."

The same thing happens again, said Mr. Tierney, when the provost wants to become president. "You say, 'I doubled my research funding again.' It's an emblem," says Mr. Tierney. "But we need to look hard and fast at if we need all of these research universities."

5 Comments

The Chronicle of Higher Education

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Join the discussion...

**autocrat** · 4 years ago

The pursuit of knowledge is not a drain; the pursuit of overhead dollars and administrative vanity is.

5 ^ ▾ · Reply · Share >

**powellw** · 4 years ago

"27 . . . at least doubled their own spending on research over the following decade, yet nearly half of those fell in the federal ranking."

This article focused on the failed efforts. It would be interesting to hear more about the ~13 schools (besides Vanderbilt) who remained even or advanced in the ranking. Do these data imply that doubling research spending actually worked in half the cases, or were the "movers" in the rankings primarily institutions that cut research spending, left it flat, or did not increase their research investment as dramatically?

2 ^ ▾ · Reply · Share >

**11134078** · 4 years ago

Pity the poor humanist who has no role in these games and is nevertheless frequently victimized by them!

2 ^ ▾ · Reply · Share >

**davi2665** → 11134078 · 4 years ago

Seriously? Humanists victimized by such research expenditure games? Unlike most researchers in medical science, physical science, and engineering disciplines, humanists virtually NEVER have to raise their own salaries through extramural grants, and are virtually immune from the relentless pressure to bring in money or lose their job. The expectation of science faculty to raise their own salaries, coupled with the bad judgment of the federal funding agencies to permit funding of salaries for non-federal faculty, is one of the major sources of this problem in the first place. Many of the universities throwing money at research have little in the line of strategic planning, other than pressuring science faculty to bring in "more" in virtually any area that will provide funding. Sometimes they guess right, sometimes they don't.

2 ^ ▾ · Reply · Share >

**schultzjc** · 4 years ago

Bravo for Vanderbilt: the picture of deans locking arms and cooperating is like a rare dream. I've never had the privilege of seeing that.

^ ▾ · Reply · Share >

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# THE CHRONICLE OF HIGHER EDUCATION

## Administration

December 12, 2007

### State Fair Stands in the Way of U. of Nebraska's Proposed Research Park

*By Paul Fain*

Just across the street from the University of Nebraska at Lincoln sit 251-acres of land dedicated to showcasing the state's proud farm heritage. Long a statewide social event, the Nebraska State Fair has been located on the same spot in northern Lincoln since 1899.

While about 300,000 people attend the fair each year, even its supporters say the event has seen better days. The fair has been running a deficit, and many of its 72 buildings must be torn down or refurbished.

A recent study found the fair needs \$30-million in upgrades, said Harvey S. Perlman, chancellor of the university's Lincoln campus. Mr. Perlman ought to know, as he is also a member of the fair's governing board.

"I don't see how the state fair becomes very successful on the current property given its current financial situation," he said.

The university, however, has its own ideas for the land. Mr. Perlman and a coalition of Lincoln business leaders are pushing to move the fair to make way for a university research complex, which is called the Nebraska Innovation Park.

The ambitious plan, which was unveiled last month, calls for 1.6-million square feet of research space to be shared by private start-up companies, mature corporations, and university researchers. It would also link the university's main campus with its east campus, which is also adjacent to the state fair.

"It's really the only property that's contiguous" to both campuses, Mr. Perlman said. "It is ideal in that sense."



The university has drawn support for building the park at the fairgrounds, but many hurdles remain. The majority of the state fair's board members oppose the plan, while state lawmakers grumbled over a recent study that estimated costs of up to \$175-million to build the fair at a new location. Other critics have worried about the state's share of construction costs for the research park.

The agriculture committee of Nebraska's legislature will hold a public hearing on Friday on the future of the fair, and is scheduled to make its recommendations by the next day. Key state lawmakers are keeping their opinions close to the vest in advance of the hearing on the controversy. But Dave Heineman, Nebraska's Republican governor, has suggested that the state fair and the university share the land, a compromise the university and the fair's board oppose.

"Friday will tell," Mr. Perlman said.

### **An Agrarian Future?**

The resistance to the University of Nebraska's aspirations is familiar to many public universities. State governments want universities to drive economic growth, and they encourage college presidents to think big about public-private partnerships. But political support for such ventures often wavers when start-up costs and sensitive real estate acquisitions are discussed.

In Nebraska, the challenge is exacerbated by urban-versus-rural symbolism, with some Nebraskans arguing that to give the fair the boot in Lincoln would be a betrayal of the state's agrarian history.

The state fair's executive director, Barney Cosner, has criticized the plan, pointing to its possible costs. He has also questioned whether the university needs the space.

The university's leaders argue that the fair and the state's economy will benefit from the plan.

Furthermore, the University of Nebraska system's president, James B. Milliken, said Innovation Park would be a "more modern interpretation" of Nebraska's farming tradition, with a heavy



emphasis on research involving life and animal sciences, agriculture, and biofuels.

"It's got greenhouses on it," Mr. Milliken said of the plans for the park. "We're not embarking on an entirely new enterprise."

The Lincoln Chamber of Commerce is on board, and supports the university's plans.

"We feel this is the best use of the land," said Wendy Birdsall, the chamber's president, in an e-mail message. "This investment has the potential to bring millions of dollars back into the Lincoln community."

However, the chamber's position also illustrates the precariousness of the deal. Although the chamber's leaders support moving the fair, they also want to keep it in the city.

"Lincoln has hosted the fair for more than a century, and we would hate to see it leave," Ms. Birdsall said.

### **Inspiration in North Carolina**

Nebraska's main Lincoln campus is compact, occupying an area of about four city blocks. Located near downtown, it's pinned in with no room for growth besides the fair's land.

The university's foundation manages a small technology facility about five miles from the campus. Some opponents of Innovation Park have suggested that the university expand its research offerings at that location or elsewhere on the city's outskirts. But experts on university research parks said proximity is key for a top-of-the-line venture.

"You put new resources downtown, you get new spin-offs," said John I. Gilderbloom, a professor of urban and public affairs at the University of Louisville. Mr. Gilderbloom, an expert on urban development, said it would be a "grave mistake" for Nebraska lawmakers to reject a research park at such a prime location.

The bustling-campus approach of the university's plan, which features retail and recreation spaces, draws from the design of North Carolina State University's Centennial Campus. To see the



potential payoffs of the park, Mr. Perlman and Mr. Milliken have taken members of the University of Nebraska's Board of Regents to Raleigh, N.C., to tour the huge, well-established research campus. With 2.7-million square feet of research space, the 23-year-old "technopolis" is adjacent to North Carolina State's main campus.

Although he acknowledges that the plan for the Nebraska park is ambitious, Mr. Perlman is confident that the private sector will foot most of the construction bill. He also says realistic numbers for affordably moving the fair will be presented at the Friday hearing.

The university has much to gain from the research park, Mr. Perlman said. But even without it, he said, the university's research efforts are secure. Nebraska's annual research budget recently surpassed \$100-million, and has doubled in six years.

The main benefit of the park is the "leveraging of university research for economic advance for the state," he said.

"Nebraska has more at stake in this issue than just the university. We'll continue to grow our research."





# STRATEGIC FRAMEWORK REPORT

## PLANTAS DE LA SIERRA DE TOLIMA

Por el Sr. Dr. J. J. GONZÁLEZ

Profesor de Botánica en la Universidad de Tolima

BOGOTÁ, 1950

Imprenta "El Financiero"

Calle 10 No. 10-10

Bogotá, D. C.

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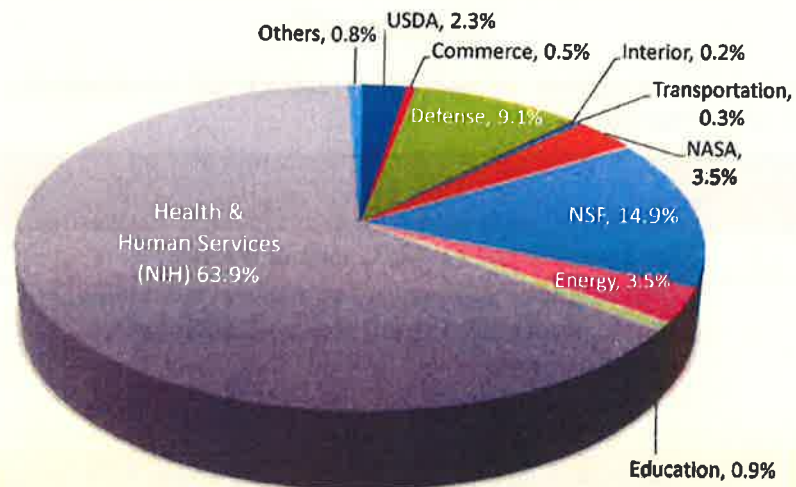
## Strategic Framework Report Federal Research Expenditures

Office of the Executive Vice President and Provost

University of Nebraska  
June 2015

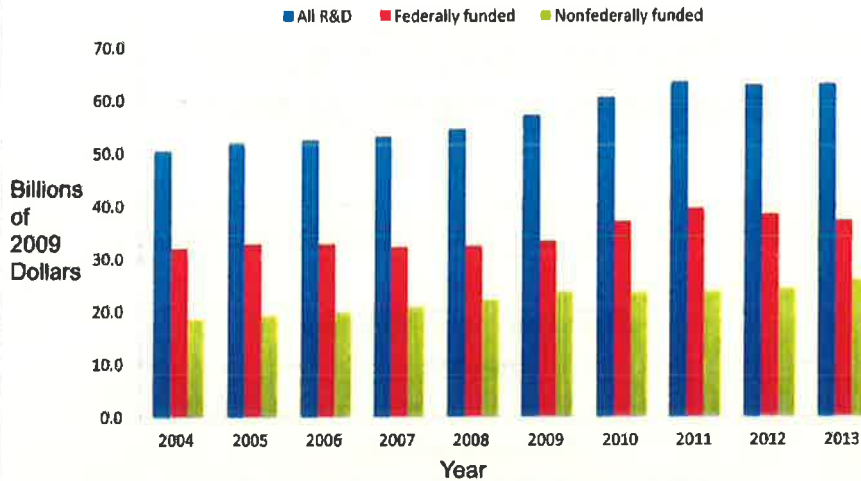
Dr. David Jackson  
Associate Vice President for Academic Affairs

### Federal Funding Available to Colleges and Universities



Source: NSF Federal Funds for Research and Development Sept. 2014 (FY2012 Data)<sup>2</sup>

## U.S. Higher Education R&D Expenditures



SOURCE: NSF, Higher Education Research and Development Survey

3

## Strategic Framework Item 4-a-i (Research)

Increase federal support for instruction, research and development, and public service.

Reporting Period	Accountability Measure	Report Date
FY 2013-2014	Increase UNL and UNMC federal research expenditures by 20% more than the weighted total federal appropriations per year on a three-year rolling average.	April June

Research expenditure targets adjust in concert with available federal funding

4

## Metric Calculation Rationale

### Three year averaging:

- Campus research expenditures fluctuate year to year
- Federal research funds available to institutions also fluctuate

A three-year average evens out extreme values

5

## Metric Calculation Rationale

### Weighted federal appropriations by agency:

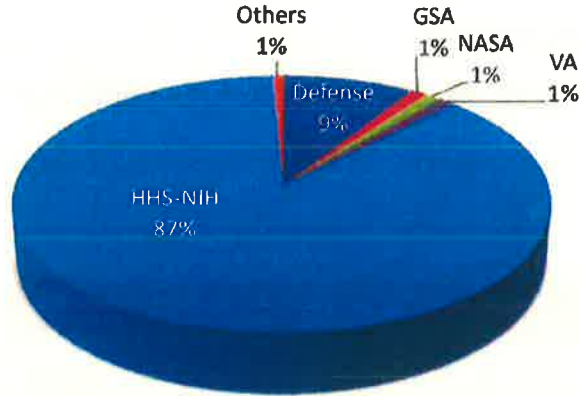
Federal agency budgets are increased/decreased at different rates.

- UNMC – Medical Center – Biomedical / Life Science
  - NIH, DOD
- UNL – Diverse Research Enterprise
  - NSF, NIH, USDA, DOD

Metric target is weighted to reflect the agency source each campus seeks, and the growth/decline in available funding from each agency

6

### UNMC Federal Research Expenditures (By Agency, FY 2014)



Source: A-133 Independent Auditors' Report

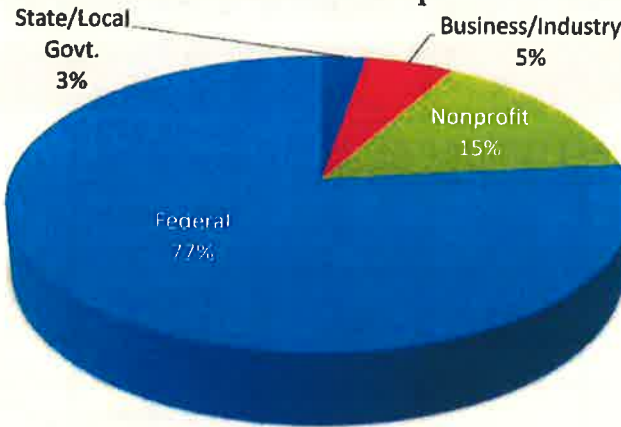
### UNMC Performance Calculation

FY 2012	FY 2013	FY 2014		3-Year Average
\$84,105,105	\$80,701,796	\$76,204,223	<b>Federal R&amp;D Expenditures</b>	
-2.3%	-4.00%	-5.57%	<b>UNMC Growth Rate</b>	<b>-3.96%</b>
0.0%	-5.2%	3.1%	<b>Weighted Agency Growth Rates</b>	<b>-0.7%</b>
			<b>20% better than 3-year average</b>	<b>-0.5%</b>

UNMC's -3.96% growth rate does not meet the target metric of -0.5%

✓ see p. 2

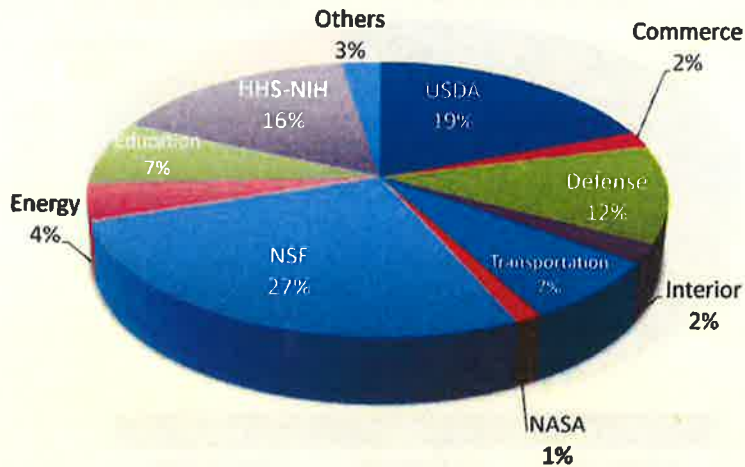
### UNMC's Extramural Research Expenditure Portfolio



FY 2011	FY 2012	FY 2013
\$98,517,000	\$107,065,000	\$104,972,000

Source: NSF – Research Expenditures FY13

### UNL Federal Research Expenditures (By Agency, FY 2014)



Source: A-133 Independent Auditors' Report



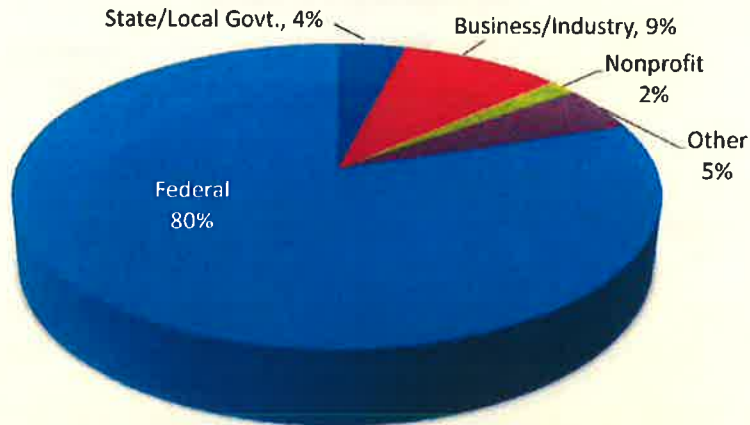
## UNL Performance Calculation

FY 2012	FY 2013	FY 2014		3-Year Average
\$100,979,895	\$97,289,090	\$88,005,359	Federal R&D Expenditures	
-2.8%	-3.70%	-9.54%	UNL Growth Rate	-5.35%
1.38%	-2.8%	6.0%	Weighted Agency Growth Rates	1.5%
			20% better than 3-year average	1.8%

**UNL's -5.35% growth rate does not meet the target metric of +1.8%**

✓  
see p. 2

## UNL's Extramural Research Expenditure Portfolio



FY 2011	FY 2012	FY 2013
\$124,561,000	\$123,652,000	\$122,726,000

Source: NSF – Research Expenditures - FY13

12



## Total Extramural Research Expenditures

	2011	2012	2013
UNK	\$1,178,000	\$823,000	\$911,000
UNO	8,026,000	6,487,000	6,293,000
UNMC	98,517,000	107,065,000	104,972,000
UNL	124,561,000	123,652,000	122,726,000
<b>Total</b>	<b>\$232,282,000</b>	<b>\$238,027,000</b>	<b>\$234,902,000</b>

SOURCE: NSF, Higher Education Research and Development Survey

13

## Key Points

- Competition for federal research funding remains high for a near-constant or declining funding pool
- Extramural research from non-federal sources has mitigated declines in federal expenditures
- While continuing to compete for federal resources, campuses are broadening their funding sources

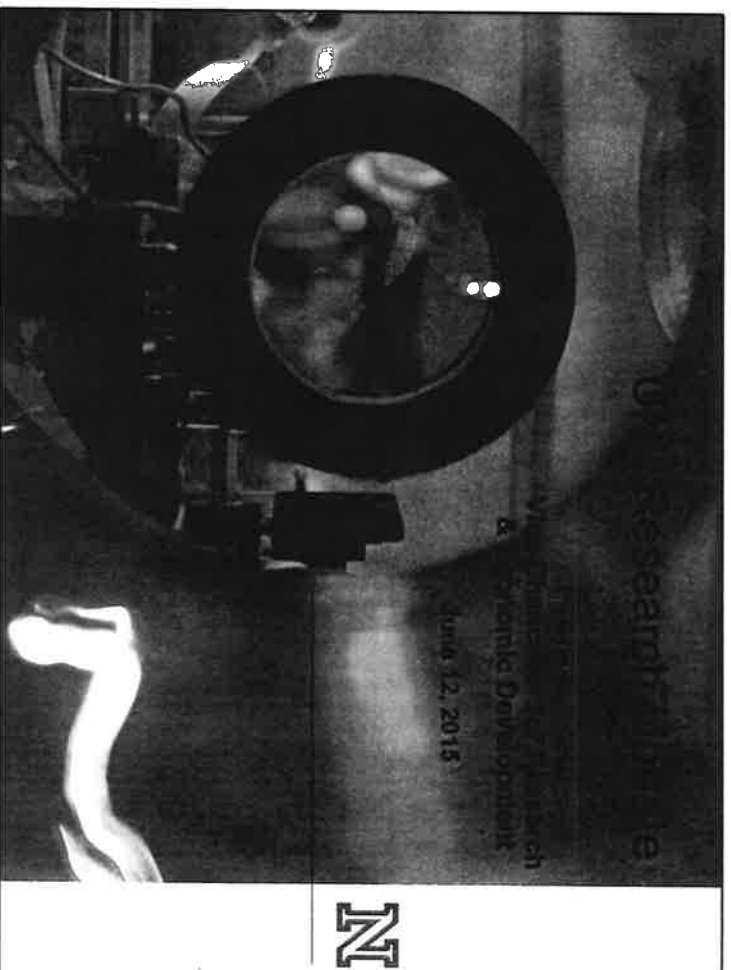
14

## Future Recommendation

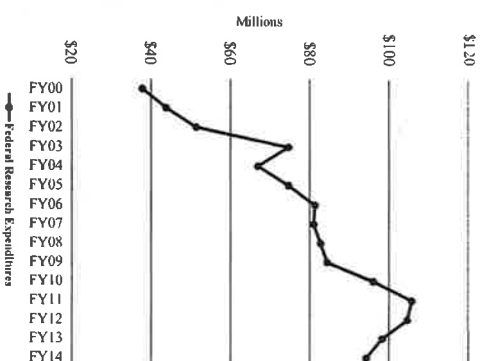
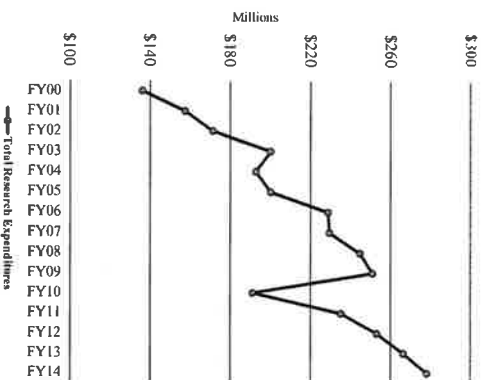
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Reporting Period	Accountability Measure	Report Date
FY 2014-2015	Increase UNL and UNMC federal research expenditures by 20% more than the weighted total federal appropriations per year on a three-year rolling average.	March 2016

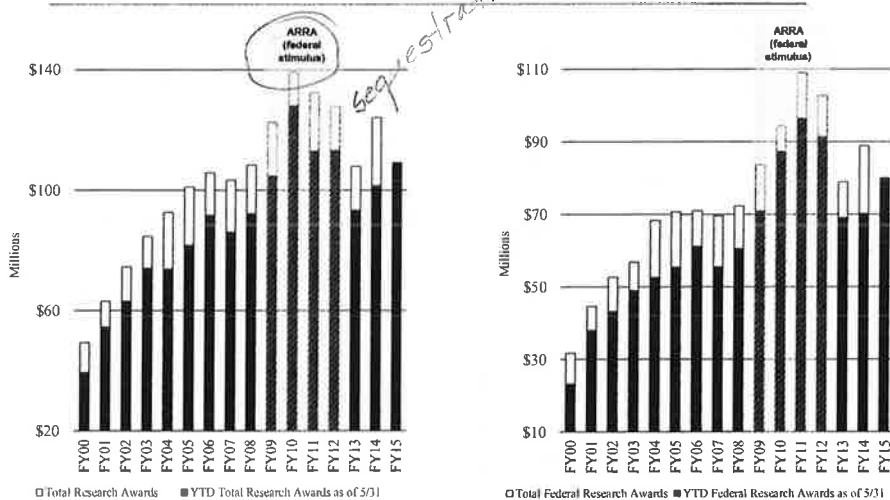


## Total & Federal Research Expenditures



OFFICE OF RESEARCH AND ECONOMIC DEVELOPMENT

## Total & Federal Research Awards



OFFICE OF RESEARCH AND ECONOMIC DEVELOPMENT

3

## Strategy for Growth



- Attract and retain talent
- Build collaborations
- Expand funding in key areas (industry, NSRI/DOD)
- Invest in infrastructure
- Connect faculty with funding agencies



OFFICE OF RESEARCH AND ECONOMIC DEVELOPMENT

4

## Recent Major Research Awards



- **Nebraska Center for the Prevention of Obesity Diseases through Dietary Molecules**
  - Janos Zempleni, PI: \$11.3M, NIH
  - Partner: UNMC



5

OFFICE OF RESEARCH AND ECONOMIC DEVELOPMENT

## Recent Major Research Awards



- **Compact Muon Solenoid Upgrade**
  - Aaron Dominguez, PI: NSF, \$11.5M
  - UNL leads partnership of 9 universities



6

OFFICE OF RESEARCH AND ECONOMIC DEVELOPMENT

## Attract and Retain Talent



- Faculty growth initiatives in progress university-wide
  - Voluntary early retirement program provided resources for new hires
  - Start-up funding for new faculty is major challenge in physical and life sciences, engineering ✓



OFFICE OF RESEARCH AND ECONOMIC DEVELOPMENT

7

✓ Start-up packages  
Assoc. \$1m plus rest of work

## NU-Wide Collaborations



- UNMC
  - Visits by Chancellor Gold, Dean Ali Khan and faculty
  - Matt Rizzo, Neurological Sciences Chair, on CB3 Executive Board
  - Partners in three \$10M+ UNL biomedical NIH COBREs
- UNO
  - NebraskaMATH Omaha Public Schools Teacher Leader Academy, \$5.5M, Sherwood, Lozier Foundations
- UNK
  - Laser Surface Processing of Thermal Management Systems, \$90,368 NASA EPSCoR



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8

## Building a New Strategic Area



- Social and Behavioral Sciences Research Consortium
- Strategic hire: Kirk Dombrowski, Sociology
  - Minority Health Disparities Grant, \$3.3M, NIH
- Central Plains Research Data Center 2015
  - Funded by NSF, U.S. Census



Main Terminal  
Senior RDC  
Administrator



Satellite Terminal  
Associate RDC  
Administrator



## Expanding NSRI/DOD Engagement



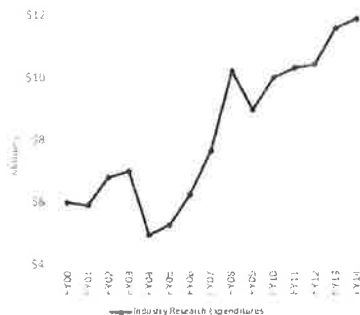
- New NSRI Director of Research: Bill Charlton
  - Dual position NSRI-UNL
  - Broader DOD engagement



## Expanding Industry Funding



- Industry-sponsored research increasing
- Building collaborations with industry



OFFICE OF RESEARCH AND ECONOMIC DEVELOPMENT

## Expanding Industry Funding



**Opportunities**

**MORE DIRECT AND EFFICIENT SANITIZATION APPROACHES**  
 • Develop, test and evaluate novel methods, systems and products, improve food safety and food security

**COOPERATIVE TECHNOLOGY DEVELOPMENT**  
 • Build cross-industry relationships, reduce time to market and get best value for investment

**EDUCATION**  
 • Development of online content to educate, inform and train

**CONSULTING**  
 • Provide training and consultation to industry partners

NEBRASKA ALLIANCE FOR ADVANCED FOOD SANITATION



OFFICE OF RESEARCH AND ECONOMIC DEVELOPMENT



## Success Story: Materials and Nanoscience



- Materials Research Science & Engineering Center
  - Evgeny Tsymbal, PI; \$9.6M, NSF
  - Partners: North Carolina A&T State University, University of Wisconsin-Madison



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OFFICE OF RESEARCH AND ECONOMIC DEVELOPMENT



 **Materials Research Science and Engineering Center** 

# P-SPINS

## Polarization and Spin Phenomena in Nanoferroic Structures

**Goal:**  
To be an internationally recognized center of excellence for integrated research and education in nanoferroic materials

**National grand challenges:**  
Extending Revolution in Information-Technology, New Materials for Energy Technologies, Developing America's Talent Pool



**UNIVERSITY OF  
Nebraska  
Lincoln**

## Research in two Interdisciplinary Groups

➤ Emerging phenomena in nanoferroic materials with unique prospects for information and energy technologies

**IRG1**

Christan Binek  
IRG1 Leader

Shireen Adenwalla

Kirill Belashchenko

Peter Dowben

Axel Enders

Xia Hong

Tino Hofmann

Dhananjay Kumar

Jeffrey Shield

Xiaoshan Xu

Jian Zhang

**IRG2**

Alexei Gruverman  
IRG2 Leader

Stephen Ducharme

Chang-Beom Eom

Axel Enders

Xia Hong

Jinsong Huang

Eva Schubert

Alexander Sinitskii

Andrei Sokolov

Evgeny Tsymbal

Xiao Cheng Zeng

## MRSEC Research at the Forefront of Information Technology

### P-SPINS revolutionizes IT through Voltage-controlled Spintronics

1956 IBM's 1st computer with HDD of weight > 1 ton  
Data storage 5MB

iPhone 6 processor with 2 billion transistors  
Data storage 128 GB

iPhone 7 rumored features :  
3D Display, holographic keyboard

From: [http://en.wikipedia.org/wiki/The\\_Singularity\\_Is\\_Near](http://en.wikipedia.org/wiki/The_Singularity_Is_Near)

Writing bits without heat

AFM  
Pinned FM  
Insulator  
Free FM  
ME AFM  
Bottom Electrode

Read

Write

$M$

$M_r(E < 0)$

$E < 0$

$E > 0$

$M_r(E > 0)$

$H$

$Cr_2O_3 (0001)$

N

10  
MRSEC Board of Regents, June 12, 2015

**MRSEC Impact on University of Nebraska**

**Materials Research Vision**  
Nanoscale Science & Technology – UNL priority area for investments and growth

**Faculty Hires**  
Xia Hong  
Alexey Kovalev  
Programs of Excellence: 16 hires + 5 hires this year

**Research Infrastructure**

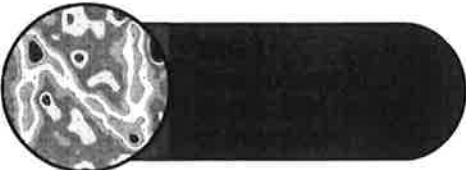
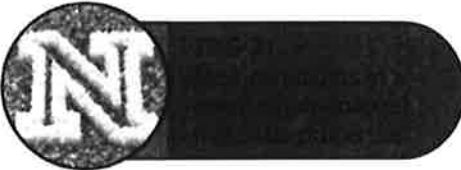
**Industrial Partnerships, Leveraged Funding**  
SRG Semiconductor Research Corporation  
J.A. Wollam Co., Inc.  
Seagate

**Increased Diversity**  
Rebecca Lai  
Prof. Julian Velez with students Giovanni Baez, Milena Bobea and Jesuan Betancourt, U. Puerto Rico

17  
MRSEC Board of Regents, June 12, 2015




## P-SPINS in a Nutshell

Polarization and Spin Phenomena in Nanoferroic Structures

Imagine new materials where you can toggle their properties electrically – almost like **with the flick of a switch**

**P-SPINS will develop such materials and elucidate the science involved!**

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# UNMC Research 2015

Jennifer Larsen, MD  
Vice Chancellor for Research



Slide

1

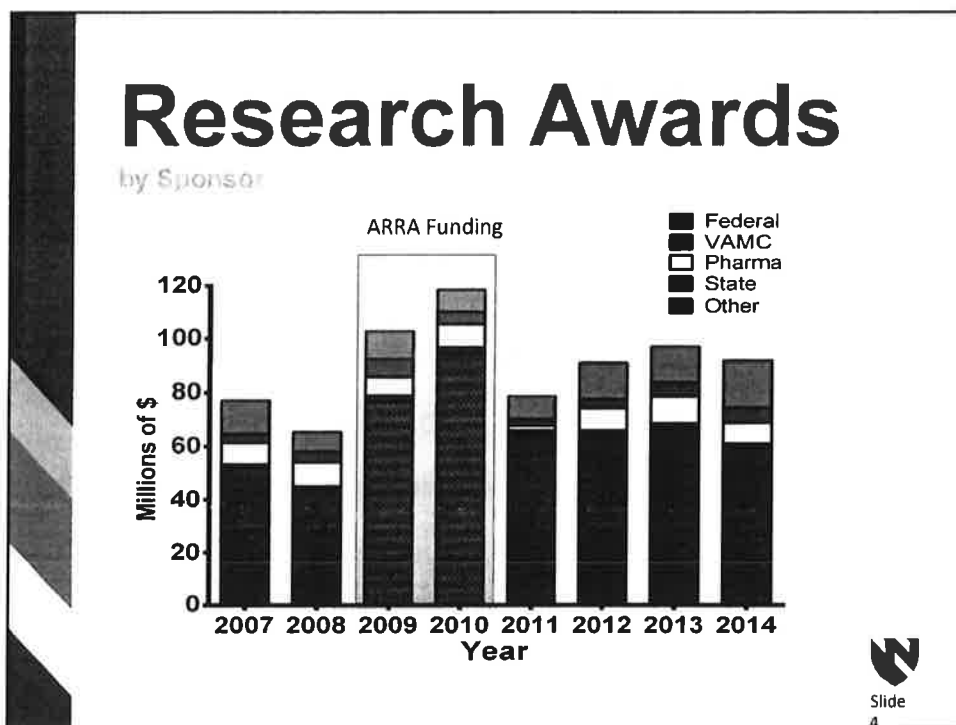
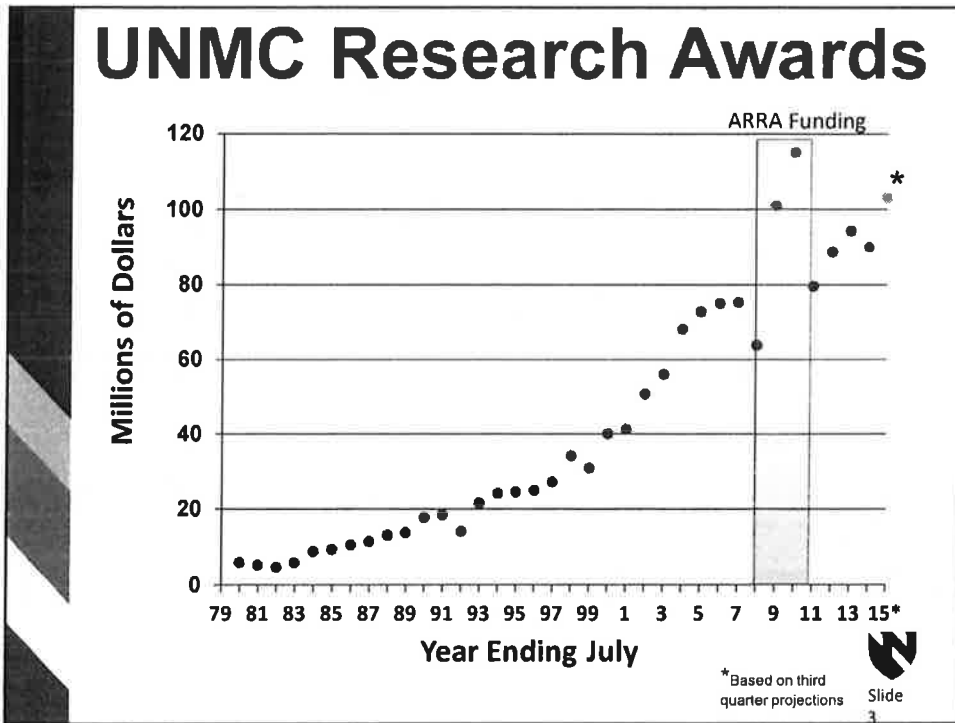
## UNMC Research Goals

- Lead globally recognized research programs
- Improve the health of Nebraska and beyond
- Improve the economy of Nebraska with....
  - Grants that create new jobs, downstream revenue from visitors, businesses
  - Innovations that can be commercialized into new products & businesses
  - Research strategies to improve health and/or reduce health care costs



Slide

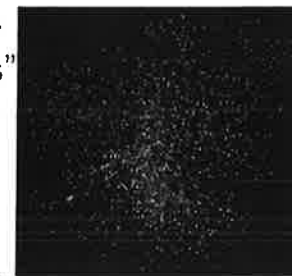
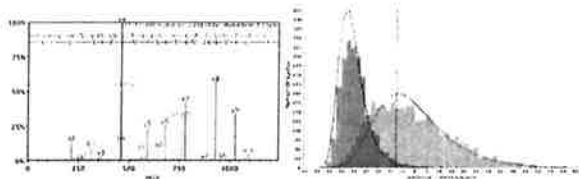
2





## Basic science: Nicholas Woods, PhD

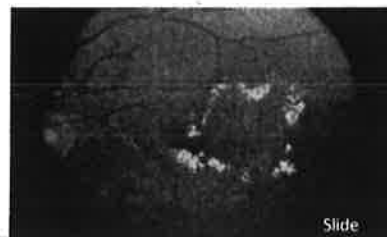
- Hometown: Fairfield, NE
- UNL graduate
- PhD, Cancer biology, U. South Florida
- Moffitt Cancer Center, Tampa, Florida
- Recruited back in 2014
- Assistant Professor, Eppley Institute
- Research focus: understanding cancer targets like BRCA1 using protein-protein interactions = "proteomics"



Slide  
7

## Clinical science: Quan Nguyen, MD

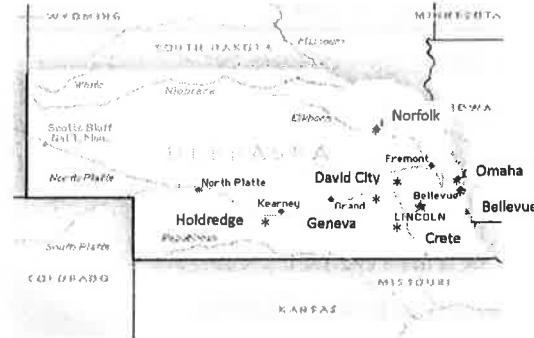
- BS, Yale University, BS
- MD, U Penn
- Ophthalmology, Harvard
- Fellowships in Immunology & Uveitis, Ocular Immunology, & Retinal Disease
- Faculty, Johns Hopkins
- 2013 UNMC, Chair, Ophthalmology, and Dir, Truhlsen Eye Institute
- Research interests: new treatments for macular degeneration, diabetic retinal disease



Slide



## Community Research: Primary Care Practice Based Research Network



- **N**etwork of rural and suburban practices + UNMC
- **W**ork together to solve health problems: obesity
- **F**unded by Rural Futures Institute and Nebraska Medical Association
- **S**trategy: infrastructure for PCORI and AHRQ funding



Slide 9

## Building Research Collaborations

Complex health problems require larger, diverse teams  
How to build?

- Tools: 'Find an expert' search engine
- Collaborative Seed grants: Nebraska Research Initiative (NRI), bioengineering pilot grants with UNL,
- Events: Retreats, "Speed dating", interest groups
- Policies that assure promotion for collaborators
- Strategic hires for special expertise
- Programs: NABID, Primary care research network, Centers of Biomedical Research Excellence



Slide 10

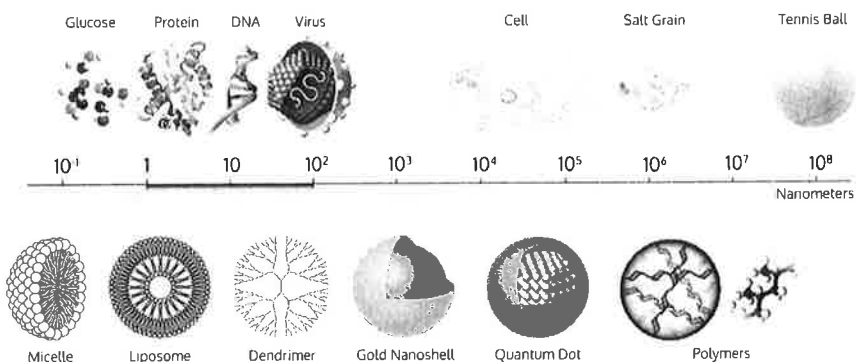
## Featured Scientist: Tatiana Bronich, PhD

- Joined UNMC in 1995
- Now Professor, College of Pharmacy
- Director, Center for Nanomedicine since 2013
- Principal Investigator, \$11.2 Mill Nanomedicine COBRE
- Other funding: \$2.5 Mill
- Mentor/Collaborator with many, PhD, PharmD, and MD
- 11 Patents
- 2014 UNMC Scientist Laureate



Slide 11

## What is Nanomedicine?

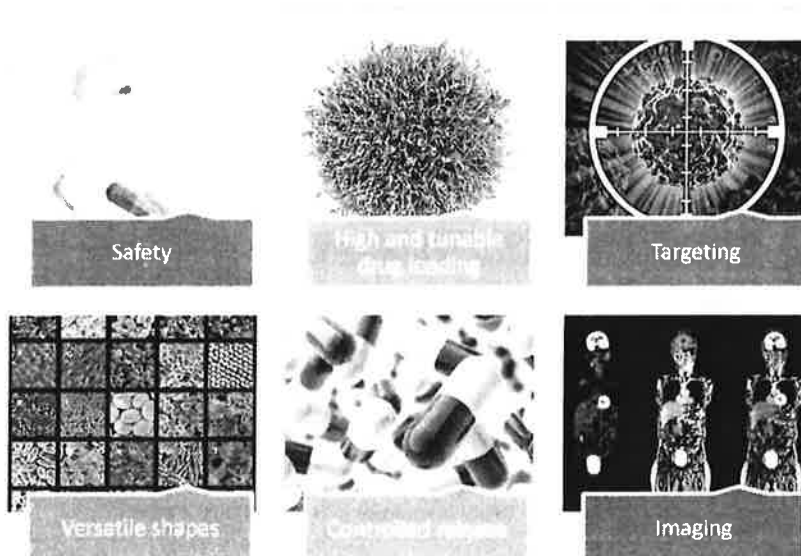


*Nanomedicine* is the application of nanotechnology for diagnosis, treatment, and monitoring human disease.



Slide 12

## Benefits of Nanomedicine



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## Nanomedicine at UNMC: 10 years

Center for Drug Delivery and Nanomedicine (CDDN)

2004 Board of Regents Center approved  
First Nanomedicine Center in the US

Director: Prof. Kabanov



**Vision:** improve health by enhancing the efficacy and safety of new & existing therapeutic & diagnostic agents through innovative methods of drug delivery & nanotechnology.

36 faculty from UNMC, UNL, UNO, and Creighton  
NIH funding, patents, start-up companies

Directors: Prof. Bronich & Oupicky

2008-2018 \$ 21.8 M NIH awards


Center of Biomedical Research Excellence (CoBRE)  
Nebraska Center for Nanomedicine




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## Core Facilities

### Bioimaging Core Facility






**Director: Michael Boska, Ph.D.**  
Professor and Vice-Chairman for Research,  
Department of Radiology



Experimental setups (MRI/MRSI, SPECT, and others) and small animal models for for analysis of:


- Nanomaterials biodistribution
- Pharmacokinetics
- Disease progression & therapeutic efficacy

### Nanomaterials Core Facility

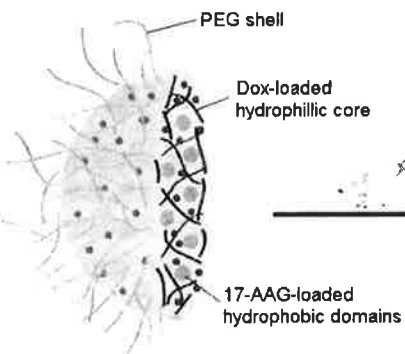
**Co-Directors: Tatiana Bronich, Ph.D. and Dong Wang, Ph.D.**  
Department of Pharmaceutical Sciences  
**Research Manager: Chantey Morris, Ph.D.**

- Nanomaterials synthesis and characterization  
NCA, LC, DLS, ICP-MS, high speed ultracentrifugation, SPR analysis etc.
- Safety assessment in cell and animal models

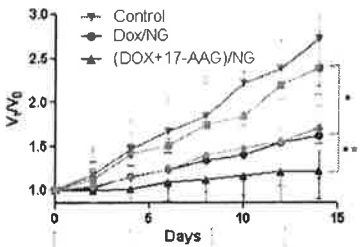


Slide 15

## Nanomedicine to treat breast cancer




(Dox+17-AAG)/NG



Antitumor response in ErbB2-overexpressing breast cancer

Desale, S, .....T Bronich, J Controlled Release, 2015, 208: 59-66,  
13<sup>th</sup> International Nanomedicine and Drug Delivery Symposium



Slide 16

## Future of Nanomedicine with Drug Discovery Center

New Pharmacy Building and Drug Discovery Center  
 6/9/2015

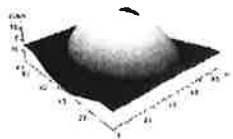
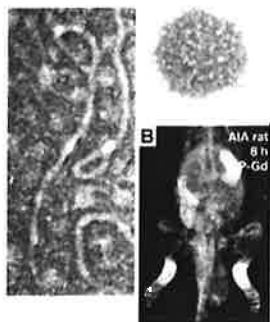
- 5 out of 10 drug candidates fail because they cannot be adequately delivered to the desired target
- Integrated approach to Drug Discovery and Drug Delivery at UNMC

Lozier Center for Pharmacy Sciences and Education  
 UNMC Center for Drug Discovery



Slide 17

## Future of Nanomedicine research



- ❖ Improve delivery
  - small drugs, polypeptides
  - genes, siRNA
  - imaging agents
- ❖ Overcome barriers
  - drug resistance
  - blood brain barrier
- ❖ Develop new tools
  - stimulus response
  - targeting
  - noninvasive imaging/detection
- ❖ Diagnose & treat
  - cancer
  - neurodegenerative diseases
  - cardiovascular diseases



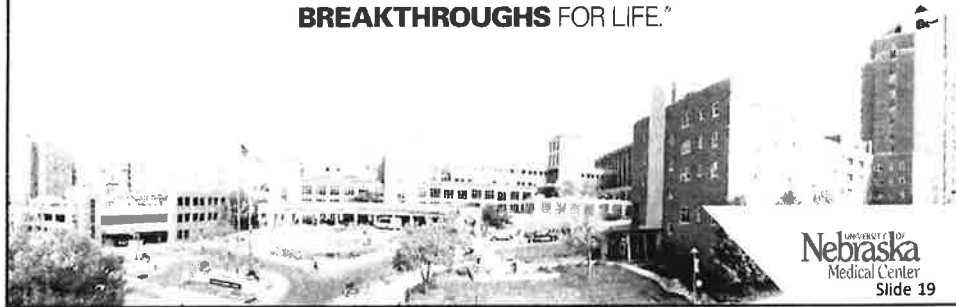
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Questions?



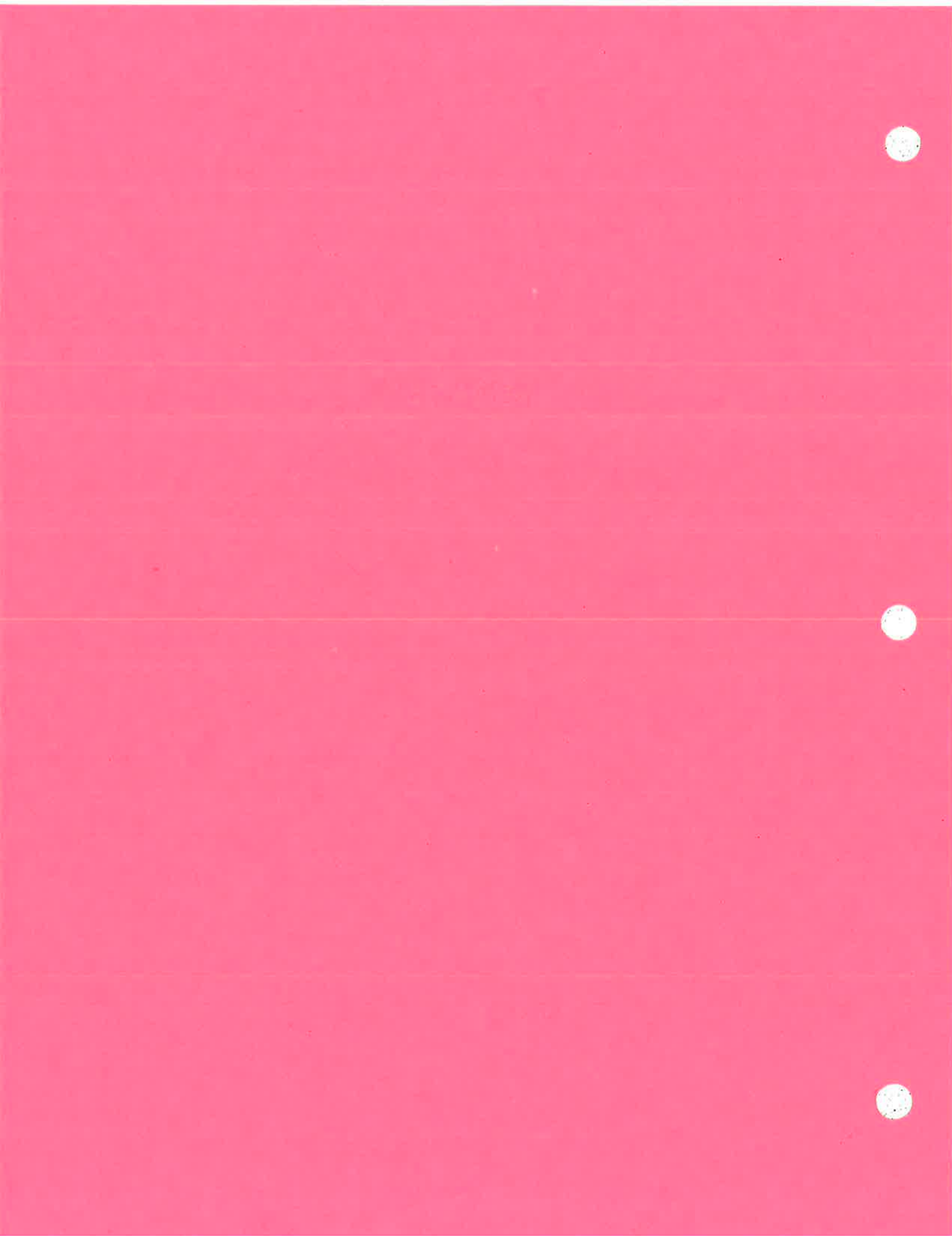
**University of Nebraska™  
Medical Center**

**BREAKTHROUGHS FOR LIFE.™**



UNIVERSITY OF  
**Nebraska**  
Medical Center  
Slide 19

REPORTS





CHARACTERISTICS AND TRENDS IN  
NORTH AMERICAL RESEARCH PARKS:  
21<sup>ST</sup> CENTURY DIRECTIONS



## **CHARACTERISTICS AND TRENDS IN NORTH AMERICAN RESEARCH PARKS: 21<sup>ST</sup> CENTURY DIRECTIONS**

- October 2007
- The Future of Research Park Development p.xi, The Future of Research Park Development includes: Amenities will be an important offering of future research parks. On-site amenities such as restaurants and retail stores are considered important in attracting innovation employees.
- Changes in Research Parks in Past 5 to 10 years.
- Challenges and Opportunities Facing University Research Parks
- Park Characteristics
- Keys To Success
- Trends in University Research Development



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## CHARACTERISTICS AND TRENDS IN NORTH AMERICAN RESEARCH PARKS: 21ST CENTURY DIRECTIONS

**Battelle**  
*The Business of Innovation*

PREPARED BY:  
Battelle  
Technology Partnership Practice



ASSOCIATION OF  
UNIVERSITY  
RESEARCH  
PARKS

DEVELOPED IN COOPERATION WITH:  
Association of University Research Parks

October 2007



**ASSOCIATION OF  
UNIVERSITY  
RESEARCH  
PARKS**

*Creating Communities of Innovation*

**Battelle**  
*The Business of Innovation*

The Association of University Research Parks is a non-profit organization that promotes “the development and operations of research parks that foster innovation, commercialization and economic competitiveness in a global economy through collaboration among universities, industry, and government.”

Battelle is a global leader in science and technology. Headquartered in Columbus, Ohio, it develops and commercializes technology and manages laboratories for customers. Battelle’s Technology Partnership Practice includes leading-edge practitioners and analysts who are experienced in conceptualizing and designing research parks built around universities and other research institutions.

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## ACKNOWLEDGMENTS

Battelle and the Association of University Research Parks (AURP) wish to thank the many university research and science park directors who responded to the survey for their time and input. Without their cooperation, this effort would not have succeeded.

Special thanks also go to Austin Beggs, Mike Bowman, Jackie Kerby Moore, David Winwood, Greg Deason, Lora Lee Martin, Jim Currie, Brian Darmody, Michael Donovan, Greg Hyer, Teresa McKnight, Robert Geolas, Rick Weddle, Scott Levitan, and Harold Strong of the AURP Board of Directors and AURP Executive Director Eileen Walker, all of whom provided input on the survey design and helped identify trends in research park development.

We thank our survey provider Insightrix for its efforts in making sure that the survey documents were distributed and completed in an efficient and timely manner.

We would also like to thank our sponsors:

### Research Triangle Park

The Research Triangle Park (RTP) was established in 1959 and is located in the heart of North Carolina between Durham, Chapel Hill, and Raleigh, home to three top-tier research universities. RTP enjoys an extraordinary history as the leading and largest high-technology research park in North America, covering 7,000 total acres with over 20 million square feet of developed space. RTP is home to over 157 companies spanning a diverse set of industries. These companies employ 39,000 full-time knowledge workers and thousands of contract workers who have not only played a large role in transforming the economic profile of the state, but also contributed to some of the greatest scientific discoveries of the past 50 years.



In addition to being a driver of highly focused, technology-based economic development in the Research Triangle Region for almost half a century, RTP has been a center of innovation. It is home to winners of the Nobel and Pulitzer prizes, as well as recipients of the U.S. Presidential Award and National Foundation Awards. Just as important, it is the workplace of technical, chemical, and biomedical scientists and patent holders whose discoveries have impacted the lives of all citizens in this country and around the world. Some of the most profound discoveries of the 20th century have been influenced by scientists and researchers working in RTP.

### The University Financing Foundation, Inc.

The University Financing Foundation, Inc. is a 501c3 tax-exempt organization composed of individuals with a base of experience that allows them to understand the unique needs of education and research institutions and effectively serve those institutions in a real-estate development and finance role.



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## EXECUTIVE SUMMARY

- *University research parks in the United States and Canada encompass more than 47,000 acres and include 124 million square feet of space*
- *At full buildout, these research parks will include 275 million square feet of space*
- *More than 300,000 workers in North America work in a university research park*
- *Every job in a research park generates an average of 2.57 jobs in the economy*

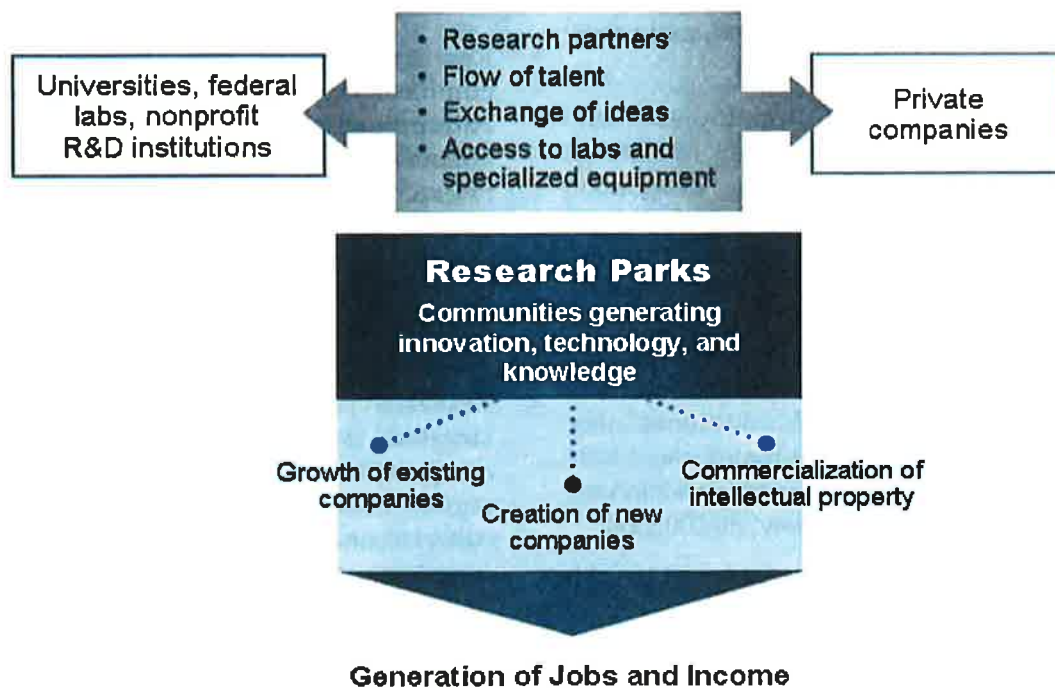
Research parks are emerging as strong sources of entrepreneurship, talent, and economic competitiveness for regions, states, and nations. They have become a key element in the infrastructure supporting the growth of today's knowledge economy. By providing a location in which researchers and companies operate in close proximity, research parks create an environment that fosters collaboration and innovation and promotes the development,

transfer, and commercialization of technology (Figure ES-1).

To better understand how research parks are changing and their role as drivers of economic development, Battelle partnered with the Association of University Research Parks (AURP) to conduct a comprehensive assessment of research parks in the United States and Canada. This report presents the findings from a survey of research park directors that requested data on park characteristics, input on trends in university research park development, and data to measure the economic impact of research parks. The survey was sent to 174 university research parks; 134 parks (77 percent overall) responded. Key findings of the survey are discussed below.

A total of 134 North American university research parks responded to the Battelle-AURP survey, resulting in a response rate of 77 percent.

**Figure ES-1. Research Park Concept**



## Research Parks in 2007

### Overview

University research parks in 2007 encompass more than 47,000 acres and include 124 million square feet of space in 1,833 buildings. While parks report that an average of 86 percent of available space is currently occupied, 94 percent of the parks report that they have room for expansion. At full buildout, of the 35,354 acres projected to be developed, approximately 22,000 (62 percent) are currently developed and less than half of the estimated total square feet (275 million) is currently open. Parks range in size from 2 acres to 7,000 acres, with an average size of 358 acres; half of the parks have 114 or fewer acres, suggesting that a number of very large parks are raising the average.

The typical North American research park is located in a suburban community with a population of less than 500,000. Most parks are operated by university or university-affiliated nonprofits. Tenants are primarily private-sector companies; but, parks also include university and government facilities. University research parks provide a range of business services to their client companies, many through incubators. The typical park has an operating budget of less than \$1 million a year, and most parks have limited profitability.

The typical park has 750 employees with employment primarily in the following industry segments—IT industries, drug and pharmaceutical firms, and scientific and engineering service providers—accounting for 45 percent of all university research park jobs. The total employment impact for the 107 parks that provided data on industry employment totaled almost 680,000 jobs. Every job in these research parks generated 2.5 additional jobs in the economy. Battelle estimates the total employment impact of all research parks in the US and Canada to be more than 750,000 jobs.

Table ES-1 presents a profile of a typical North American research park.

### Today's Research Parks

Today's research parks differ substantially from the model that emerged in the 1960s and 1970s (Figure ES-2). Most early research parks were first and foremost viewed as real-estate development projects. They were often developed on vacant land in proximity to a university or other research institution and provided an attractive, campus-like setting. It was assumed that firms would be attracted by proximity to the research institution. These parks focused on recruiting operations of primarily large, technology-based companies; but, in reality, the companies that located in the parks usually had few, if any, actual ties to the university.

In the 1990s, research parks began to look for ways to be more attractive to technology companies. Many sought to attract research and development (R&D) facilities that could anchor the park and attract other tenants. They also began to provide incubator space and build multitenant space to accommodate entrepreneurs and smaller, start-up firms.

### Key Findings

Today's research parks have become key drivers of regional development. Following are key findings regarding today's research parks.

- **Research parks are placing greater emphasis on supporting incubation and entrepreneurship to grow their future tenant base and less on recruiting.** Of the research park directors responding to the survey, 95 percent indicated that creating an environment that encourages innovation and entrepreneurship is a high priority, with 71 percent indicating it as a very high priority for their park.
- **Research parks are more likely to be targeted to particular niche areas.** To compete in technology development, a region or state must differentiate itself and cultivate and sustain specialized areas of expertise where it can be a world leader. As a result, it has become more common

**Table ES-1. Profile of a Typical North American Research Park\***

Typical Research Park	
Size	<ul style="list-style-type: none"> <li>▪ 114 acres</li> <li>▪ 6 buildings</li> <li>▪ 314,400 sq. ft. of space, 95% occupied</li> <li>▪ Only 30% of total estimated sq. ft. at buildout currently developed</li> <li>▪ 30,000 sq. ft. of incubator space</li> </ul>
Location	<ul style="list-style-type: none"> <li>▪ Suburban community</li> <li>▪ Less than 500,000 population</li> </ul>
Governance	<ul style="list-style-type: none"> <li>▪ Operated by the university or university-affiliated nonprofit</li> </ul>
Tenants	<ul style="list-style-type: none"> <li>▪ 72% are for-profit companies</li> <li>▪ 14% are university facilities</li> <li>▪ 5% are governmental agencies</li> </ul>
Employment	<ul style="list-style-type: none"> <li>▪ Typical park employs 750</li> <li>▪ Major industry sectors: IT, drugs and pharmaceuticals, and scientific and engineering service providers</li> </ul>
Finances	<ul style="list-style-type: none"> <li>▪ Less than \$1 million per year operating budget</li> <li>▪ Revenues primarily from park operations but funds also come from universities and state, local, and federal government</li> <li>▪ Limited or no profitability; 75% of the parks have no retained earnings or retained earnings of less than 10%</li> </ul>
Services	<ul style="list-style-type: none"> <li>▪ Provide a range of business and commercialization assistance services, including               <ul style="list-style-type: none"> <li>▪ Help in accessing state and other public programs</li> <li>▪ Linking to or providing sources of capital</li> <li>▪ Business planning</li> <li>▪ Marketing and sales strategy advice</li> <li>▪ Technology and market assessment</li> </ul> </li> </ul>

\*Data cited for typical parks are based on median for all research parks responding to the survey.

#### **Research Parks Are Succeeding in Incubating and Growing Companies**

- Nearly 800 firms graduated from park incubators in the past 5 years
- About one-quarter of these graduates remain in the park
- Only 13 percent failed
- Less than 10 percent left the region

Figure ES-2. Evolution of Research Park Model

Early Parks: Stand-Alone Physical Space	1990s: Connections	2000 and Beyond: Economic Driver for the Region
<ul style="list-style-type: none"> <li>▪ Real-estate operations</li> <li>▪ Campus-like environment, selling single parcels of land</li> <li>▪ Focus on industrial recruitment</li> <li>▪ Few, if any, ties between tenants and university or federal laboratories</li> <li>▪ Little provided in terms of business assistance or services</li> </ul>	<ul style="list-style-type: none"> <li>▪ Anchor with R&amp;D facilities aligned with industry focus of park</li> <li>▪ Innovation Centers and technology incubators more common</li> <li>▪ Multitenant facilities constructed to accommodate smaller companies</li> <li>▪ Some support for entrepreneurs and start-up companies provided directly</li> </ul>	<ul style="list-style-type: none"> <li>▪ More and more mixed-use development, including commercial and residential</li> <li>▪ Increased focus and deeper service support to start-ups and entrepreneurs</li> <li>▪ Less focus on recruitment</li> <li>▪ Formal accelerator space and plans for technology commercialization roles emerge</li> <li>▪ Greater interest on part of tenant firms in partnering with universities</li> <li>▪ Universities more committed to partnering with research park tenants</li> <li>▪ Amenities from day care to conference and recreational facilities added</li> </ul>

for research parks to focus on identified technology areas or industry clusters.

- **Research parks are being viewed more as an expression of commitment to economic development.** Two-thirds of respondents indicated closer involvement by university leadership and more emphasis on university involvement in the past 5 to 10 years.
- **Park directors report that the primary reason why tenants locate in a university research park is to access a skilled workforce, including students.** Eighty-five percent of the respondents indicated that access to a skilled workforce was of high or very high importance to tenants.
- **University research parks use various mechanisms to foster university-industry relationships.** The most effective include having partnership-developer staff or others charged with relationship building between industry and departments, availability of university core user facilities open to industry, human resource matching

programs such as internships and co-ops, and access to university research labs and university technology transfer and commercialization offices.

### University Research Parks of the Future

A new model—strategically planned mixed-use campus expansions—is emerging that includes space for academic and industrial uses. These mixed-use campus developments are designed to create an innovative environment with a free and frequent exchange of information between academic researchers and their industry counterparts. Key features of these mixed-use developments include the following:

- Substantial space for significant future research growth
- Planned multitenant facilities to house researchers and companies



- Housing and other amenities attractive to young faculty, postdocs, and graduate students
- Flexible development options, some led by universities and others led by developers.

**Amenities will be an important offering of future research parks.** On-site amenities, such as restaurants and retail stores, are considered important in attracting innovation employees. Three-quarters of the respondents indicated a greater emphasis on amenities within the park now than 5 to 10 years ago; yet, the number of parks reporting such development was fairly small. This may be because parks have not yet been able to incorporate amenities or are having difficulty finding the financing to develop them. But, in the future, parks will likely need to include such developments.

#### **The Future of Research Park Development**

- **A new model—strategically planned mixed-use campus expansions that include space for academic and industrial uses—emerges**
- **On-site amenities are critical to attract innovation employees**
- **Research parks serve as an effective tool to spur urban revitalization**
- **Research parks are used to leverage assets of non-university R&D organizations**
- **Research parks become leaders in sustainable design**
- **Research parks embrace global focus**

Research parks are being developed in urban areas as a component of neighborhood revitalization plans, such as the park under development adjacent to Johns Hopkins University in Baltimore; the Center of Research, Technology and Entrepreneurial Exchange

(CORTEX) in St. Louis; and Piedmont Triad Research Park in Winston-Salem. But, nearly half the respondents indicated that they did not think there was more emphasis on parks being built as part of a revitalization effort rather than as a greenfield development.

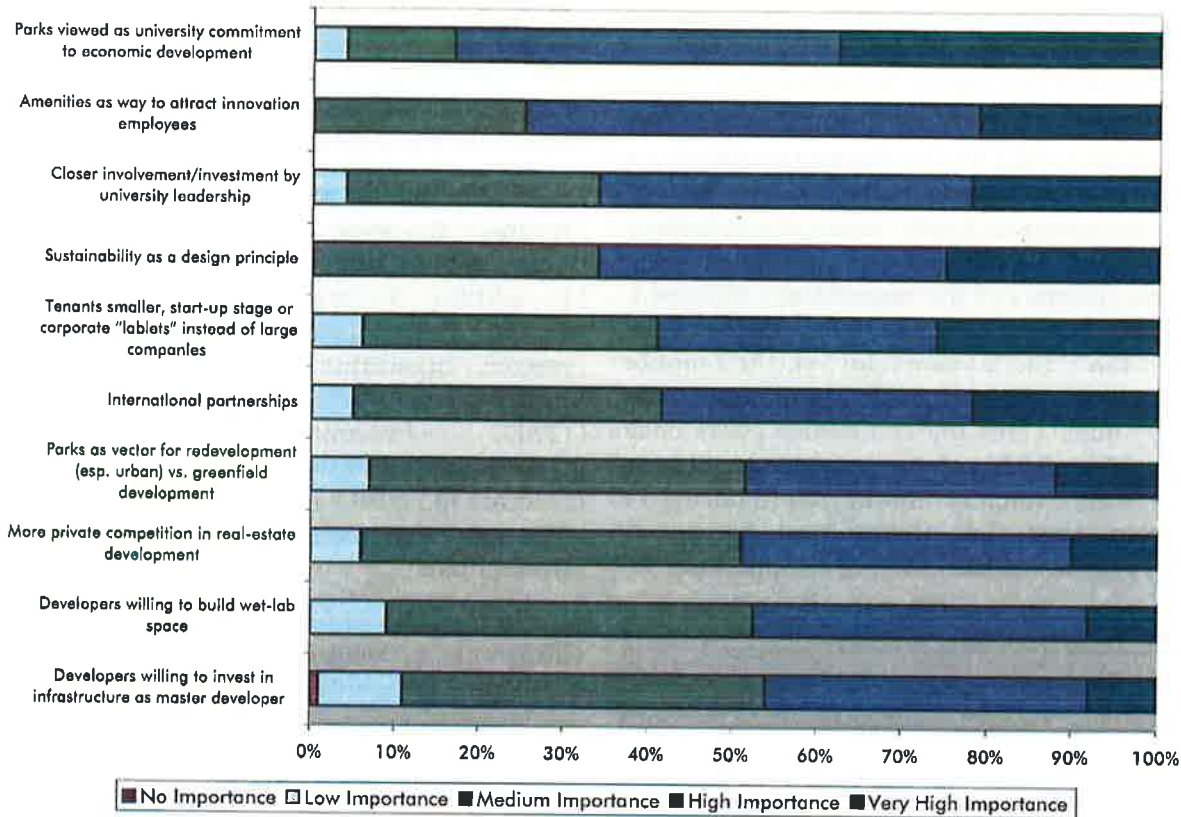
**Research parks are being developed to leverage the assets of non-university R&D organizations such as federal laboratories.** In addition to universities, major medical research centers and public and private research organizations can be key drivers of technology-based economic development (TBED). It is becoming increasingly common for communities in which a federal laboratory is located to create a research park to leverage laboratory resources to realize economic development.

**More emphasis is being placed on sustainability as a design principle.** Sustainable development involves balancing development needs against protection of the natural environment. In the future, it is likely that research parks will be developed to minimize impact on the environment and to use renewable energy sources and “green” building practices. Two-thirds of the respondents indicated that there has been an increase in the emphasis on sustainability in the past 5 to 10 years and this trend is likely to continue.

**International partnerships are becoming more important in university research parks.** Sixty percent of the research parks surveyed indicate that there was more emphasis on international partnerships in the past 5 to 10 years than previously, and park directors said that they expected to see parks attracting more international tenants and having more of a global focus in the future.

Figure ES-3 summarizes respondents’ views on the importance of changes occurring in research parks during the past 5 to 10 years.

**Figure ES-3. Importance of Changes in Research Parks in Past 5 to 10 Years**



### The 21st Century University Research Park: Challenges and Opportunities

Research parks are an important component of the innovation infrastructure needed to support today's knowledge economy, much as roads, bridges, and rail were critical to yesterday's industrial economy. Research parks have evolved and matured to become more integrally related to their higher-education partners and technology-driven tenants. *But, there is still an unfinished agenda:*

- The multidimensional components of a business-higher-education partnership have not fully developed.
- Research parks face challenges as they continue to try to respond to the demands placed on them.

### Challenges

Among the key challenges facing research park directors and institutions developing a research park are the following:

- **Overcoming commercialization challenges.** While university research parks can lead to commercialization of new technologies by promoting relationships between researchers and companies, moving innovation into the marketplace does not happen naturally or easily. A challenge for research parks will be to provide support services to ease the commercialization process.
- **Bridging cultural barriers between the academic and business communities and facilitating true partnerships.** Parks must



### Challenges

- **Overcoming commercialization challenges**
- **Bridging cultural barriers between the academic and business communities**
- **Achieving integration with the university**
- **Obtaining funding for operations and buildings**
- **Responding to increased competition owing to globalization and the changing nature of corporate R&D**

continue to serve as an intermediary that understands both cultures and innovatively fosters integrated, collaborative efforts.

- **Achieving greater integration with the university.** Research park directors must continue to integrate the research park and its tenants into the fabric of the university.
- **Obtaining funding for operations and buildings.** Most research parks have very few resources in their early stages and do not generate sufficient revenue to be self-supporting. The need for capital will become even greater as research parks try to implement live-work-play models.
- **Responding to increased competition owing to globalization and the changing nature of corporate R&D.** Research parks in North America will be challenged to attract the operations of foreign companies and to retain the R&D operations of U.S. companies.

### Opportunities

The challenges noted above also suggest opportunities for research park development. Research park managers will need to devote more attention and time to the following 10 areas as they evolve the 21st century research park model:

1. **Industry-university partnerships.** Research parks will need to expand the relationships and deepen the partnerships

between industry and educational and medical institutions.

2. **Financing and support for commercializing intellectual property.** Research parks will need to offer funding and support for technology commercialization, including proof-of-concept funding.
3. **Retention and attraction of talent.** Research parks may be in a position to do more to retain, attract, and grow talent, from establishing advanced training facilities to partnering with community colleges to ensure a supply of skilled technicians.
4. **Speculative and surge space development.** In the old economy, local economic development agencies offered "speculative" (spec) space, paid for from community and federal funding sources, to fast-track recruitment prospects. In the knowledge economy, firms come and go more quickly, space needs change constantly, and flexible space will increasingly become the norm. Parks may be able to offer the equivalent of 20th century spec space in a 21st century innovation model, through a staged program of expanded multitenant space.
5. **Collaboration among firms and with other partners.** It is likely that technology tenants want more opportunities to network among each other and with sources of knowledge in labs, research organizations, and elsewhere. Parks will, in partnership with trade and other associations, need to increase their focus on tenants' networking needs and requirements.
6. **Safety and security.** Research parks may have a role to play in offering safe, secure environments for technology development. The post-9/11 world suggests the need for controlled access to key strategic technology assets, whether in education or industry. Parks may be well positioned to test, demonstrate, and pilot approaches to address secure and safe environments for replication in the world economy.

7. **Ongoing financial support.** For research parks to be drivers of economic development, they must continue to invest scarce resources in their quality attributes. As a result, most parks will continue to have limited retained earnings. Parks need diversified funding sources, and investments in research parks need to be considered as investments in a region's or nation's economic development infrastructure.
8. **Urban community revitalization.** Recently, a number of universities located in urban settings have begun to apply the research park concept not only to provide needed R&D space for academics and their industry collaborators, but also to stimulate the redevelopment of neighborhoods. Research parks may have a role to play in cities seeking to grow their technology industry base.
9. **Performance and accountability.** Accountability in public and private sectors requires that research parks continue to monitor their impacts and results. This survey was an important first step in developing baseline data on the economic impact of university research parks. Working collaboratively through organizations such as AURP, research parks should continue to develop and refine a set of appropriate metrics and explore various mechanisms to measure their impacts and successes.
10. **Value-added tenant services.** Parks in recent years have substantially increased tenant services, particularly to small, growing technology firms. But, the nature and portfolio of services desired in the future are likely to change. Research parks—because they are off campus—can do the applications work that complements the research focus of the medical center, lab, or higher-education institution. Parks may become a test bed for new ideas and approaches in building technology-driven firms and their products and processes.

## Conclusion

Today's research parks differ significantly from their predecessors. A new model is emerging that includes

- **Planned mixed-use campus expansions** that provide shared space in which industry and academic researchers can work side by side. These developments embody a commitment by universities to partake in broader activities, offering companies high-value sites for accessing researchers, specialized facilities, and students and promoting live-work-play environments.
- **A strong focus on entrepreneurship and start-up and emerging companies.** Research parks are being used as a tool to spur homegrown business retention, expansion, and creation.
- **Comprehensive developments that offer** not only sites for companies and research institutions but provide **a full range of on-site amenities**, such as services, restaurants, retail stores, and, in some cases, housing.

Today's parks are creating an environment that fosters collaboration and innovation and leverages the talent and expertise of universities to drive TBED. Research parks have the potential to

- Translate discovery into application;
- Develop talent;
- Commercialize technology; and
- Integrate government, higher-education, and industry interests.

Achieving this potential, however, will require enlisting institutional leadership and community support, accessing sufficient capital for park development, and recognizing the long-term nature of this endeavor.

## INTRODUCTION

### Background

University research parks are not a new phenomenon. Some of the early parks, such as Stanford Research Park, Purdue Research Park, and Research Triangle Park (RTP), were established in the 1950s and 1960s. University research parks became popular tools to promote university-driven economic development during the 1970s through the 1990s and into the new century. Parks have never been instant successes, but many have succeeded after many years of patient development. This report describes the changes in these parks over the past several decades and suggests their continuing evolution as the 21st century unfolds.

Recently, interest in university research parks has resurged for a number of reasons:

- First, there has been a key shift in how industry approaches research and development (R&D). Rather than rely on internal research labs to generate innovative ideas, companies are seeking strategic alliances with other companies, universities, and federal laboratories. It is becoming increasingly common for large technology companies to open research centers or “tablets” next to major research universities.
- Second, there has been a shift in the nature of research itself. More and more, the most important scientific questions and advances require interdisciplinary research teams, often across multiple institutions. Thus, companies are seeking proximity to such institutions.
- Lastly, there is a growing recognition that a state’s or region’s competitiveness for technology-based growth depends, in part, on its ability to create physical environments that are attractive and facilitate industry and university interactions. Research parks and mixed-use campuses have therefore become attractive locations

for technology companies to establish and remain as they grow and expand. The traditional case of offering a location to attract firms into a region is no longer the primary focus. Serving as a location for business retention and expansion is also a focus.

The university research park model is evolving to respond to these needs.

### Surveys

In 2002 and 2005, the Association of University Research Parks (AURP) surveyed both member and nonmember research parks throughout the United States and Canada to profile the size and scope of the industry. In 2007, AURP partnered with Battelle’s Technology Partnership Practice (TPP) to conduct a much more comprehensive assessment of university research parks.

**A total of 134 North American university research parks responded to the Battelle-AURP survey, resulting in a response rate of 77 percent.**

During spring 2007, Battelle and AURP conducted a Web-based, 31-question survey of university research parks in North America. The survey requested data on park characteristics, input on trends in university research park development, and data to measure the economic impact of park development. The survey was sent to 174 university research parks in the United States and Canada; 134 parks (77 percent overall) responded. The number of respondents varies somewhat from question to question because every park did not respond to every question. Eighty-one percent of the respondents were in the United States, with the remainder in Canada. Survey services were provided by Inshtrix Research Services.

This report summarizes the results of the survey and provides information on the development of the university research park model and suggested trends for future development.

### **Project Team**

**AURP** is a nonprofit organization that promotes "the development and operations of research parks that foster innovation, commercialization and economic competitiveness in a global economy through collaboration among universities, industry, and government."

**Battelle** is a global leader in science and technology. Headquartered in Columbus, Ohio, it develops and commercializes technology and manages laboratories for customers. Battelle's TPP includes leading-edge practitioners and analysts who are experienced in conceptualizing and designing research parks built around universities and other research institutions.

**Insightrix Inc.**, established in June 2001, offers research-related services (such as online survey capabilities, traditional data collection, focus groups, personal interviews, strategic planning, and management consulting) via the Internet and helps clients develop, administer, and manage data collection and information strategies to achieve their informational needs.

## OVERVIEW OF UNIVERSITY RESEARCH PARKS

### What is a University Research Park?

Research parks are real-estate developments in which land and buildings are used to house public and private R&D facilities, high-technology and science-based companies, and support services. By providing a location where researchers and companies operate in close proximity, research parks create an environment that fosters collaboration and innovation and promotes the development, transfer, and commercialization of technology.

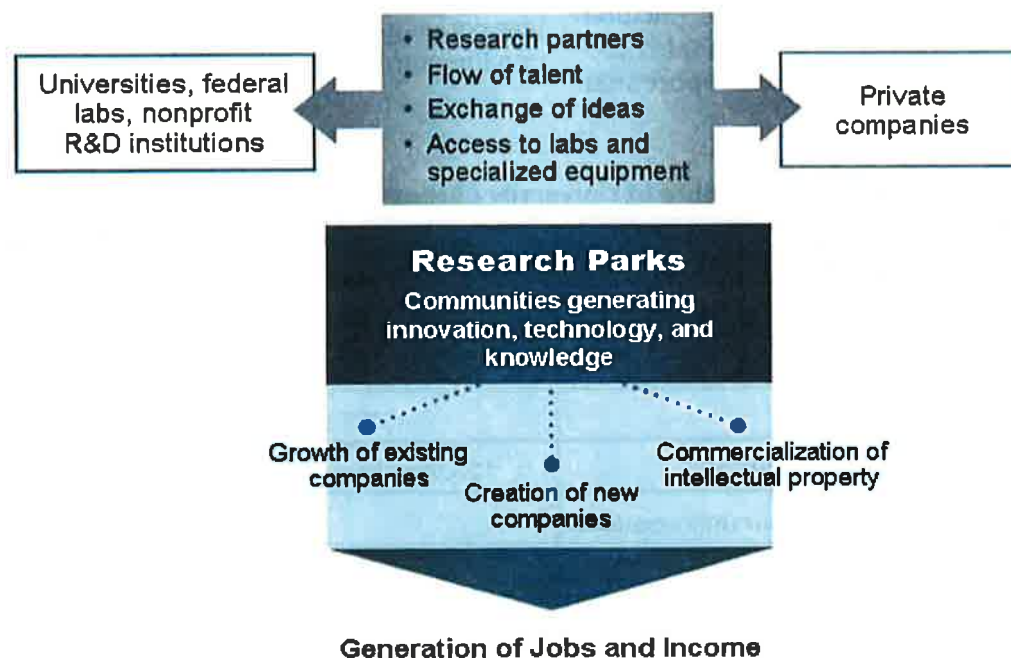
As shown in Figure 1, ideas flow between the technology generators and the companies located in the research park. In addition, the innovations, technology, and knowledge generated by the companies and research institutions lead to the creation of new start-up companies, the retention and expansion of existing firms, and the attraction of firms new to the region. Most research parks are affiliated with one or more universities; however,

research parks have also been developed close to national laboratories or other sources of technology and innovation.

AURP defines a university research park as a property-based venture, which has the following:

- Master-planned property and buildings designed primarily for private-public R&D facilities, high-technology and science-based companies, and support services
- A contractual, formal, or operational relationship with one or more science-research institutions of higher education
- A role in promoting the university's R&D through industry partnerships, assisting in the growth of new ventures, and promoting economic development
- A role in aiding the transfer of technology and business skills between university and industry teams

**Figure 1. Research Park Concept**



- A role in promoting technology-led economic development for the community or region.

The key factor differentiating a university research park from technology or industry parks is the meaningful interaction of the firms in the park with the university. This interaction can include providing internship and employment opportunities for students, sharing facilities and equipment, or conducting collaborative research. In addition, most university research parks have a university presence within the park, which can include research labs, test beds, education and training offerings, or technology transfer offices. Research park tenants, unlike technology or industry park tenants, undertake R&D within their premises in the park; employ greater concentrations of scientific, technical, and professional workers; and generate products or processes that incorporate a significant technological quotient. While the development community tends to classify many technology and industry parks as research parks, they usually do not meet the above criteria.

**Size of the University Research Park Industry**

University research parks in 2007 encompass more than 47,000 acres and include 123.9 million square feet of space in 1,833 buildings (Table 1). While parks report that

an average of 86 percent of available space is currently occupied, 94 percent of the parks report that they have room for expansion. At full buildout, of the 35,354 acres projected to be developed, approximately 22,000 (62 percent) are currently developed and less than half of the estimated total square feet (275 million) is currently open. Parks range in size from 2 acres to 7,000 acres, with an average size of 358 acres; half of the parks have 114 or fewer acres, suggesting that a number of very large parks are raising the average.

Research parks include a mix of single-tenant and multitenant buildings, with 57.5 percent of the total number of buildings characterized as single-tenant and 42.5 percent as multitenant.

**Park Characteristics**

Table 2 presents a profile of a typical North American research park. Specific park characteristics are discussed below.

**Governance**

Slightly less than half (43 percent) of the research parks surveyed are directly managed by a university or a university-affiliated nonprofit entity. Twenty-six percent are operated by independent, private nonprofits that may or may not include university representation. Very few parks are managed by either government or a for-profit developer (Table 3).

**Table 1. Acreage and Space Available in University Research Parks (2007)**

Size Metric	Total for All Parks	Average	Median
Total acreage	47,274	358	114
Acreage currently developed	21,961	179	30
Total number of buildings open	1,833	16	6
Total square footage of open buildings	123.9 million	1.09 million	314,410
Estimated percentage of space currently occupied		86%	95%
Projected acreage at full buildout	35,354	283	114
Estimated total square feet at full buildout	274.8 million	2.43 million	1.10 million



**Table 2. Profile of a Typical North American Research Park\***

Typical Research Park	
Size	<ul style="list-style-type: none"> <li>▪ 114 acres</li> <li>▪ 6 buildings</li> <li>▪ 314,400 sq. ft. of space, 95% occupied</li> <li>▪ Only 30% of total estimated sq. ft. at buildout currently developed</li> <li>▪ 30,000 sq. ft. of incubator space</li> </ul>
Location	<ul style="list-style-type: none"> <li>▪ Suburban community</li> <li>▪ Less than 500,000 population</li> </ul>
Governance	<ul style="list-style-type: none"> <li>▪ Operated by the university or university-affiliated nonprofit</li> </ul>
Tenants	<ul style="list-style-type: none"> <li>▪ 72% are for-profit companies</li> <li>▪ 14% are university facilities</li> <li>▪ 5% are governmental agencies</li> </ul>
Employment	<ul style="list-style-type: none"> <li>▪ Typical park employs 750</li> <li>▪ Major industry sectors: IT, drugs and pharmaceuticals, and scientific and engineering service providers</li> </ul>
Finances	<ul style="list-style-type: none"> <li>▪ Less than \$1 million per year operating budget</li> <li>▪ Revenues primarily from park operations but funds also come from universities and state, local, and federal government</li> <li>▪ Limited or no profitability; 75% of the parks have no retained earnings or retained earnings of less than 10%</li> </ul>
Services	<ul style="list-style-type: none"> <li>▪ Provide a range of business and commercialization assistance services, including               <ul style="list-style-type: none"> <li>▪ Help in accessing state and other public programs</li> <li>▪ Linking to or providing sources of capital</li> <li>▪ Business planning</li> <li>▪ Marketing and sales strategy advice</li> <li>▪ Technology and market assessment</li> </ul> </li> </ul>

\*Data cited as averages are based on median for all research parks responding to the survey.

**Table 3. Park Governing Structures**

Park is Governed by	Number of Parks	Percentage of Total
Independent, private nonprofit	35	26%
University-affiliated nonprofit	30	23%
Affiliated university	27	20%
Government agency, quasi-public corporation, or public authority	18	14%
For-profit developer	8	6%
Formal joint venture including diverse organizational types	5	4%
Other	10	8%

### Role of Private Developers

The common approach to financing and constructing buildings in university research parks is to hire private developers on a per-building or per-project basis. Ninety-nine of 131 parks reported that they use developers on a case-by-case basis. It is less common to use private, for-profit developers to develop the entire acreage in a park or for a park to do the development on its own. Only 15 percent of the parks reported using a private-sector master developer to develop the entire park acreage. An even smaller percentage of the parks, 5 percent, are managed and financed by private, for-profit developers. Only 11 percent of the parks do all their own development.

### Tenants and Their Employees

One hundred and twenty-two research parks reported a total of approximately 4,380 tenants. It should be noted, however, that 12 parks reported no tenants (these parks are still in planning or other initial stages). On average, the parks reported 40 tenants; the median was 24, suggesting that many parks have a small number of tenants, but a few parks have very large numbers of tenants.

Not surprisingly, park tenants are overwhelmingly private-sector firms. Of the total number of tenants, approximately 72 percent were private-sector corporations. Fourteen percent of tenants were university-related operations, 5.4 percent were government facilities, and 4.5 percent were retail or service establishments (Figure 2).

One hundred seven North American research parks reported total employment of 271,366 at the time of the 2007 survey. Each of the seven largest research parks employ more than 10,000; together, they make up 54 percent of the total 271,366 park jobs. The median university research park employs 750 individuals.

Approximately 80 percent of research park workers are employed in the private sector. An additional 11 percent are employees of colleges and universities (both public and

private institutions); 6 percent are government employees; and 3 percent are employed in businesses supporting other park tenants, such as retail stores, restaurants, daycare centers, banks, health clubs and other on-site support services and amenities<sup>1</sup> (Figure 3).

The distribution of research park jobs across the public and private sectors generally reflects the composition of park tenants. Private sector tenants comprise a somewhat lower share of tenants than jobs—72 and 80 percent, respectively. Government tenants (5.4 percent) and employment (5.7 percent) are essentially the same shares of the total. College and university tenants make up a slightly greater share of all research park companies (14 percent) than jobs (11 percent).

The survey of North American research parks was designed to analyze an important subset of the total 271,366 park jobs. By subtracting the “support” jobs within university research parks, one can examine the full breadth and economic impact of those nonsupport or “core” technology-based jobs that make these parks unique. This subset currently totals 264,413 jobs.

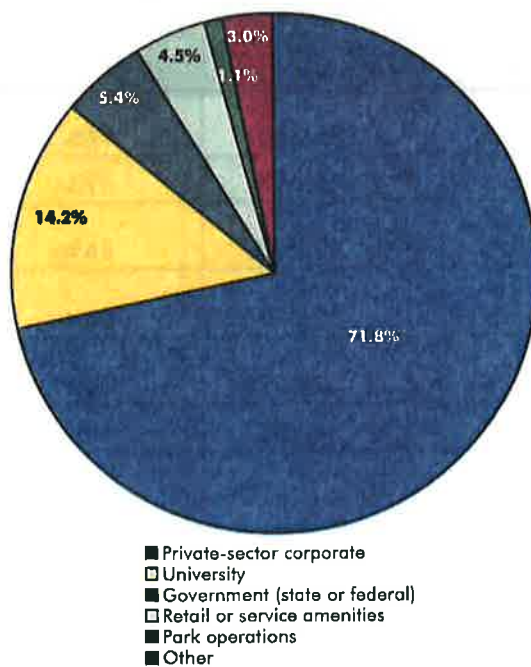
Core employment in university research parks reflects the array of tenants across a variety of technology-based industry sectors.<sup>2</sup> Widely represented across university research parks are the two major IT industries, software with 13.5 percent of all park jobs and computer hardware with an 11.0 percent share (Table 4).

<sup>1</sup> The survey question regarding this detailed employment breakdown by major sector or type (private, government, university, and supporting) was not answered by every research park providing total employment; thus, this employment composition reflects completed sector responses only.

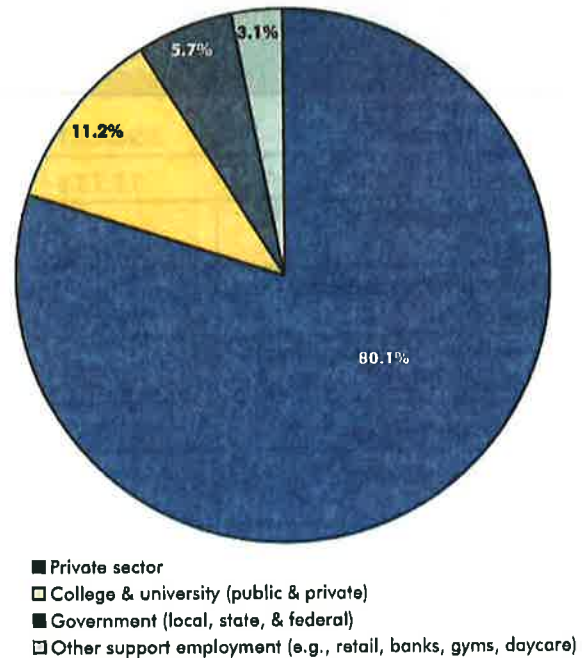
<sup>2</sup> Industry detail shown here reflects specific responses to the core industry employment items. As with other questions in the 2007 survey, some respondents elected not to provide industry detail or indicated that they did not know. A specific “Other core employment, not classified” industry was created to capture this total core employment and to allow the industry detail to sum to totals.



**Figure 2. Composition of North American Research Park Tenants by Sector**



**Figure 3. Composition of North American Research Park Employment by Sector**



Drug and pharmaceutical firms employ just over 28,000 or 10.6 percent of all research park jobs. Scientific and engineering service providers round out the top four industries with 25,747 jobs representing 9.7 percent of total core park employment. Taken together, these four industries represent 45 percent of all university research park jobs.

Firms that locate operations within a university research park tend to be especially involved in research and development activities. In the survey, special efforts were made to capture whether each specific firm/tenant is primarily engaged in R&D. Separate columns in Table 4 present the number of jobs and overall share of each sector engaged in R&D.

Overall, more than 125,000 or 47 percent of core research park jobs are with companies primarily engaged in R&D activities. This share is especially high in drugs and pharmaceuticals firms located in research parks (90 percent), as well as in computer hardware (86 percent), the agricultural biosciences (86 percent), science and engineering services (78 percent),

instrumentation and sensors (76 percent), and, not surprisingly, laboratories (76 percent). The R&D-specific activity within these industries is particularly revealing about the truly innovative nature of corporate, government, and university activity within research parks.

### Services and Amenities

University research parks often provide tenants with access to a variety of university services, including university recreational facilities, animal-care facilities, hazardous material handling, library-information services, parking, and bus or transportation systems. Some parks also allow employees to serve as adjunct faculty. However, when asked which of these were of the highest importance to tenants, the research parks responding identified as high or very high importance only library-information services and parking and, to a lesser extent, adjunct faculty status and animal-care facilities.

Park managers, when asked which of these benefits were currently offered tenants, showed the greatest availability was for parking,

**Table 4. Research Park Employment by Detailed Industry**

Industry	Current Core Park Employment	Percentage of Total Core Employment	R&D Employment Within Core	R&D Employment as Percentage of Core
<b>Total core park employment</b>	<b>264,413</b>	<b>100.0%</b>	<b>125,280</b>	<b>47%</b>
Software	35,734	13.5%	21,841	61%
Computers and Related Hardware	28,969	11.0%	25,050	86%
Drugs/Pharmaceuticals/Diagnostics	28,007	10.6%	25,110	90%
Scientific and Engineering Services	25,747	9.7%	20,059	78%
Healthcare Services	11,357	4.3%	2,754	24%
Centralized Business Support Services	11,134	4.2%	-	0%
Communications Equipment	9,204	3.5%	4,155	45%
Laboratories (medical, biological, environmental testing)	8,344	3.2%	6,340	76%
Management/General Business Consulting/Services	8,021	3.0%	211	3%
Aerospace/Defense	7,540	2.9%	1,123	15%
Advanced Materials	5,773	2.2%	1,823	32%
Instrumentation and Sensors	4,853	1.8%	3,694	76%
Other Scientific R&D	4,295	1.6%	4,295	100%
Medical Instruments and Devices	3,275	1.2%	1,380	42%
Other Bioscience R&D	3,272	1.2%	3,272	100%
Ag/Plant Biosciences and Related Chemicals	2,680	1.0%	2,300	86%
Colleges/Universities	1,772	0.7%	-	0%
Environmental Consulting/Services	1,180	0.4%	417	35%
Alternative/Renewable Energy	1,166	0.4%	864	74%
Insurance	913	0.3%	-	0%
Other Government	815	0.3%	-	0%
Other Electronics	744	0.3%	592	80%
Misc. Manufacturing	36	0.0%	-	0%
Other core employment, not classified	59,583	22.5%	N/A	N/A

library-information services, and access to and use of recreational facilities and privileges. These responses were consistent with the list of benefits that managers feel tenants wanted, with the exception of one item—adjunct faculty status—which is apparently much more desired than offered.

Most university research parks also offer a range of business and commercialization services to entrepreneurs and start-up and emerging companies. More than three-quarters of the parks reported helping entrepreneurs and firms to access capital by linking them with both private and public sources. A majority of the parks also provide assistance with business planning, marketing and sales strategy advice, and technology and market assessments (Table 5).

#### Business Incubators

Sixty-eight percent of the parks report having one or more business incubators located in their park that are targeted at serving the needs of university spin-offs and other start-up companies. A business incubator is an organization that supports the entrepreneurial process, helping to increase survival rates for innovative start-up companies. Entrepreneurs with feasible projects are selected and admitted into the incubators, where they are offered a specialized menu of support resources

and services. Eighty-two parks reported a total of 3.59 million square feet of incubator space, with an average of 44,907 square feet per park. Among parks housing community entrepreneurs, more than half (55 percent) of the incubator square footage is allocated to them, on average. An average of 38 percent of square footage in incubator space is reported to house university spin-outs.

#### Park Budgets

The parks varied greatly in the size of their annual operating budgets; but, the majority of the parks (56 percent) reported an annual operating budget of less than \$1 million, with 40 percent of the total reporting a budget of less than \$500,000. Approximately one-fifth of the parks reported operating budgets of between \$1 million and \$3 million, 16 percent reported budgets of \$3 million to \$10 million, and 7 percent reported budgets of more than \$10 million (Table 6). The median operating budget lies in the range of \$500,000 to \$1 million.

Operating funds are derived from a number of sources, with the most important contributor being park operations. Forty-eight parks reported that 100 percent of their operating budget comes from park operations. Figure 4 shows an average composition of sources that fund research park budgets.

**Table 5. Business and Commercialization Services**

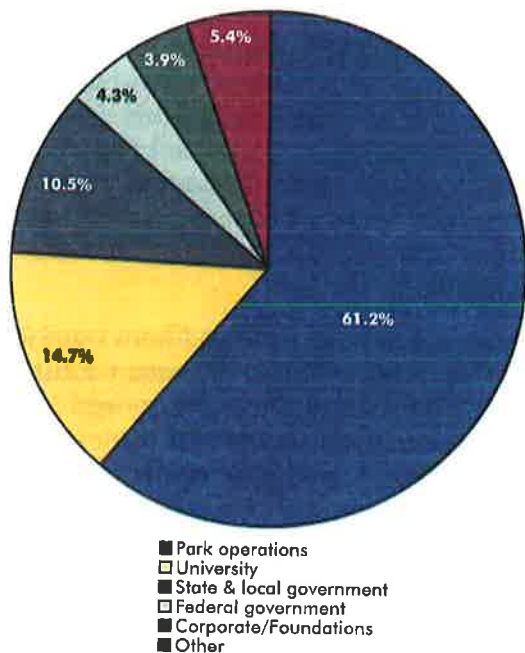
Service Offerings	Number of Parks Providing the Service	Percentage of Total Parks
Help access state and other public programs	94	81%
Link to or provide sources of capital	87	76%
Business planning	77	68%
Marketing and sales strategy advice	70	64%
Technology and market assessments	69	62%
Assist with human resource issues	48	45%
Provide proof-of-concept funding	40	38%



**Table 6. Current Annual Operating Budgets**

Current Annual Operating Budget	Number of Parks	Percentage of Total
Less than \$500,000	49	40%
\$500,000 to \$999,999	20	16%
\$1,000,000 to \$2,999,999	26	21%
\$3,000,000 to \$4,999,999	10	9%
\$5,000,000 to \$9,999,999	9	7%
\$10,000,000 to \$14,999,999	4	3%
\$15,000,000 or more	4	4%

**Figure 4. Average Composition of Research Park Funding Sources for Operations**



More than half of the research parks surveyed reported that they had generated retained earnings during the past 5 years. One-quarter of the parks reported average annual retained earnings that equaled 10 percent or less; 25 percent reported average annual retained earnings of 10 percent or greater; but, 48 percent reported no retained earnings whatsoever (Table 7).

It must also be recognized, however, as reported in Table 6, that park annual operating budgets tend to be small; 56 percent of the parks have an operating budget of less than \$1 million. This suggests that where retained earnings exist, with a few exceptions, the amounts are very small. Thus, research parks, which are undertaken to diversify local economies and build stronger industry-higher-education partnerships, usually require, at least in the short term, cross subsidization by their partners, communities, and higher-education sponsors.

**Challenges Facing University Research Parks**

The research park directors were asked to indicate the level of significance they would assign to the following challenges in the next few years:

- Capital for park development and operations
- Competition from other sources
- Equity capital for tenants
- Identifying, growing, and supporting a sufficient tenant base
- Decreasing demand for office space as companies move to operate virtually
- Financing for multitenant space
- Financing for wet-lab space

**Table 7. Average Annual Retained Earnings Generated During the Previous 5 Years**

Average Annual Retained Earnings Generated	Number of Parks	Percentage of Total
Less than 5% of operating budget	18	16%
5% to 10% of operating budget	12	11%
10% to 15% of operating budget	5	4%
15% to 20% of operating budget	8	7%
More than 20% of operating budget	16	14%
No retained earnings	54	48%

- Insufficient customer use to expand retail/commercial components of the park
- Loss of developer interest in partnering with research parks
- Limitations on the use of tax-exempt financing for buildings within the park.

Respondents indicated that they thought the greatest challenges facing them would be funding the development and operation of the park, accessing capital for client firms, obtaining financing for multitenant buildings and wet-lab space, and attracting a sufficient tenant base. These factors are discussed below. Figure 5 shows the level of importance assigned to each challenge.

### Funding

Developing a research park is a significant, long-term investment that can require millions of dollars over several years. This funding is likely to come from multiple public and private sources, including the following:

- Bond issuances (both general obligation [GO] and revenue bonds)
- State appropriations
- Land contributions
- Rental of space by sponsoring institutions
- Cross collateralization of early successes
- State investments in research, commercialization, and other technology-based economic development (TBED) programs.

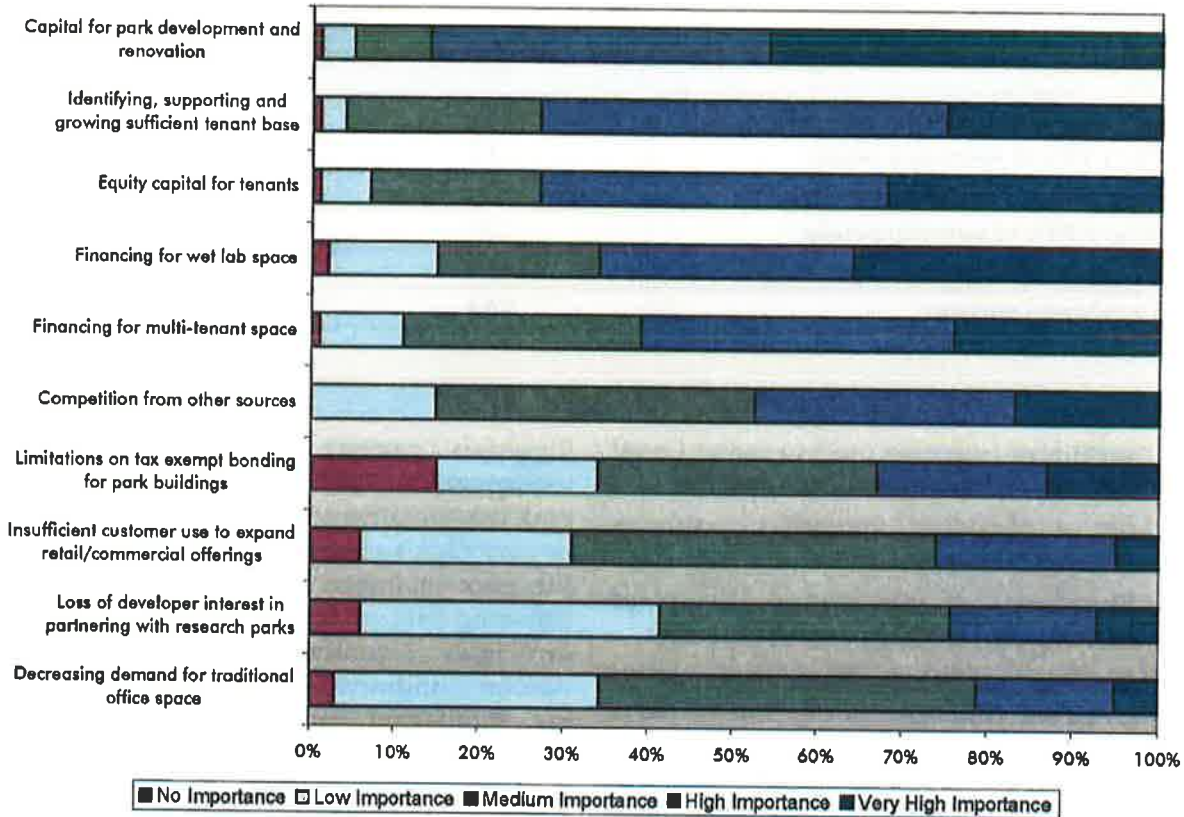
Eighty-six percent of the research park managers indicated that obtaining capital for park development and renovation was of high or very high significance. About two-thirds of the park managers indicated that obtaining financing for wet-lab space was a significant or highly significant challenge. Sixty-one percent indicated that obtaining financing for multitenant facilities would also be a challenge.

Sources respondents reported tapping to construct buildings included private developers, government grants, and bonds. The park managers reported finding few sources of operating funds with the exception of some government programs.

### Capital for Tenants

Park directors responding to the survey indicated that helping tenants access capital will be a significant challenge during the next 5 to 10 years. As parks focus more on entrepreneurial start-up and emerging companies, the ability of these companies to access capital will greatly affect whether they are able to grow and expand in the park or in the community. Seventy-three percent of the respondents indicated that this was a significant or highly significant challenge facing their park in the future.

**Figure 5. Importance of Challenges Facing University Research Parks**



Despite expressing concerns about this issue, the respondents reported having undertaken few activities designed to assist firms with accessing equity capital, although 35 parks did report some involvement in supporting the development of angel funds and in promoting networking.

**Tenants**

The respondents expressed concerns about their ability to identify, support, and grow a sufficient tenant base in the next few years. Seventy-two percent of the respondents indicated that this will be a significant or highly significant challenge.

**Keys to Success**

The respondents were asked to indicate the importance of various factors in determining success of a university research park. They identified both external and internal factors

that contribute to the success of university research park development.

**External Factors**

Key success factors in university research park development include first and foremost the **commitment of university leadership and acceptance by the local economic development community**. More than 90 percent of the respondents indicated that these factors were of high or very high importance in determining success in university research park development. Other factors considered of high importance to success include **access to capital to construct buildings, a good match between core competency of university and cluster strategy in tenant recruitment, access to equity capital sources for park tenants, and capacity to assist early-stage companies in commercialization**. Interestingly, many of these factors could be summarized in these key

words: leadership, commitment, and capital (Figure 6).

**Internal Factors**

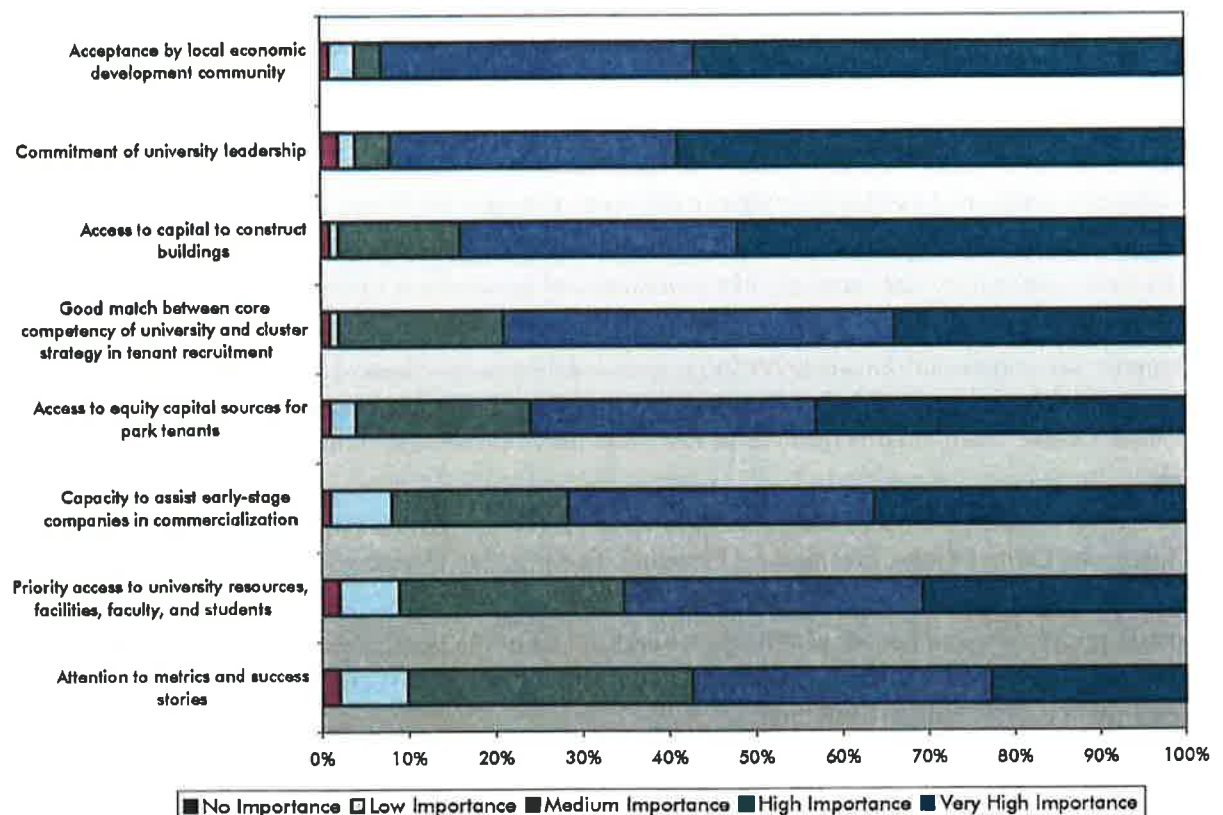
University research park directors indicated the most important internal attribute to the success of a research park as being able to offer space that is cost-competitive with privately developed alternatives in the region. The availability of multitenant space for incubator graduates, availability of a formal business incubator, and physical proximity to main university campus were cited as of high or very high importance to success. Other factors also considered important include the ability to manage inventory and hold vacant space for expansion, having full-time staff independent of the university, having in-house capacity for partnership development in addition to real-estate development, presence of a

corporate or government anchor tenant in the park, presence of university research anchors, and availability of amenities. The Virginia BioTechnology Research Park exemplifies the role research anchors can play in establishing a park (see text box). Figure 7 shows that 80 percent of the park directors indicated that every one of these factors is of medium to very high significance.

**Summary**

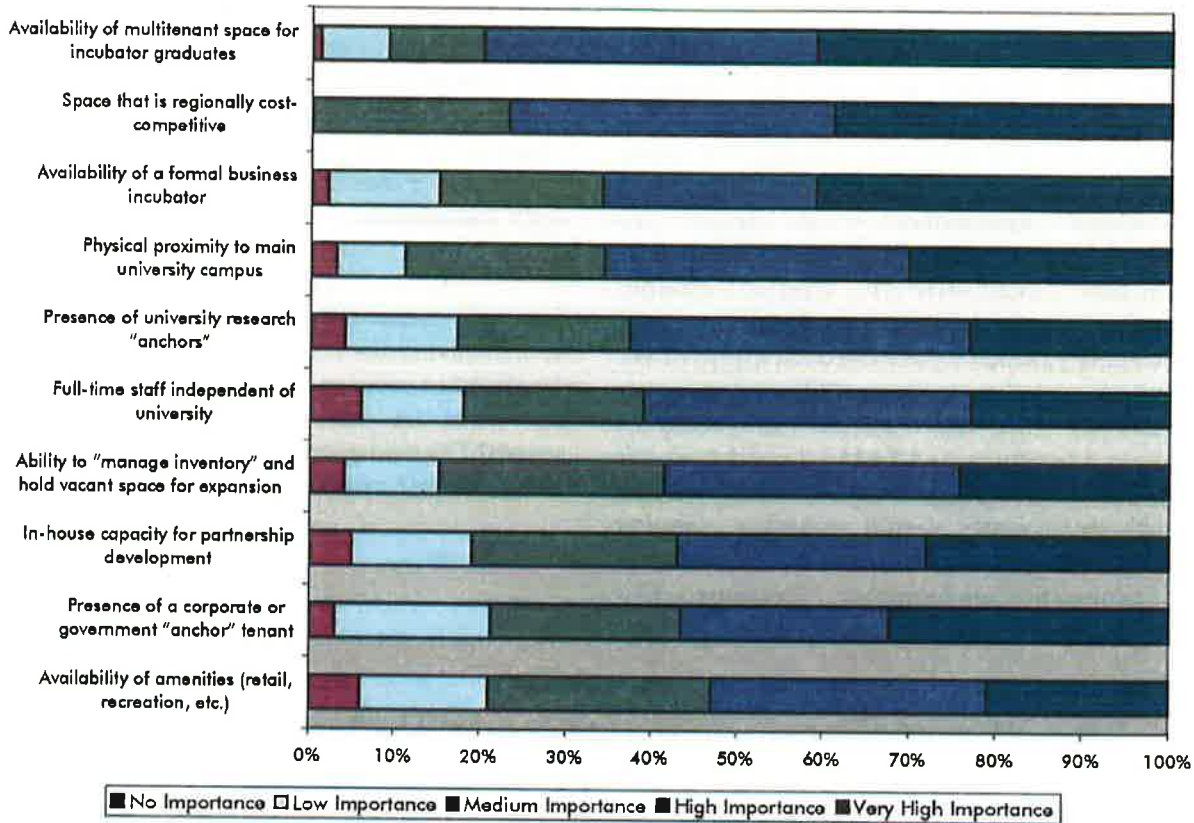
University research parks are clearly part of the infrastructure needed to support today's knowledge economy. But, how successful have they been in promoting technology-based growth? The next section of this report examines the economic impact of research parks.

**Figure 6. Key External Determinants of Success of University Research Parks**





**Figure 7. Key Internal Determinants of Success of University Research Parks**



**Research Parks Are Leveraging Anchor Tenants: Virginia BioTech**

Virginia BioTechnology Research Park, situated on 34 acres in downtown Richmond, leveraged the space needs and credit capacity of its academic and government partners to finance the earliest buildings in the park.

Virginia Commonwealth University (VCU) guaranteed the master lease of the park's first multitenant laboratory building, using it mainly for research institutes associated with the VCU Medical Center. The university also leases two adaptively reused older buildings for back-office uses.

The second multitenant lab building was developed for tenancy by the Virginia Division of Forensic Science and Office of the Chief Medical Examiner, and the sixth structure was leased solely to the Virginia Division of Consolidated Laboratory Services.

All these uses were compatible with the bioscience thrust of the park, which also includes a wet-lab incubator, and helped it attract the 450,000-square-foot Philip Morris Research and Technology Center now under final development.



## MEASURING THE IMPACT OF UNIVERSITY RESEARCH PARKS

### Why Universities Should Care About Research Parks

Park directors indicated that university research parks benefit the university in a number of ways. The most important, with 75 percent of the parks identifying it as of high or very high importance, was the ability of parks to attract research anchors, such as major national laboratories, major corporate tenants, or centers of excellence. Other important ways in which parks benefit the university are (1) park facilities help to attract research faculty, (2) sponsored research agreements often increase as a result of the interactions of faculty and companies in the park, (3) students obtain employment, and (4) the university is given opportunities to commercialize its intellectual property (Figure 8).

Another important benefit of research parks to the university is that they offer a place for faculty and students to work with industry. Three-quarters of the respondents indicated this was a high or very high priority for their park. Beyond the physical resources that they provide, research parks also foster the type of interaction between industry and universities that is critical for translating research knowledge into new technological inventions. While scientists generate basic research knowledge, other professionals with diverse backgrounds, training, and expertise are required to convert that information into technology and guide its development through various stages. Research parks can bring these varied professionals to a single location and, through shared laboratory space, meeting rooms, and break facilities, provide a forum for efficient communication.

### Why Communities Should Care About Research Parks

Communities are most likely to measure benefit from research parks by the number of firms attracted to the park, growth in the total number of existing and new companies, the

average salaries of park employees relative to the average wage in the region, and employment growth in the region. The number of people who receive workforce training is considered of less importance than measures of job and firm growth (Figure 9). It was suggested that an additional impact is the effect that the park has on the local tax base.

### Measuring Economic Impact

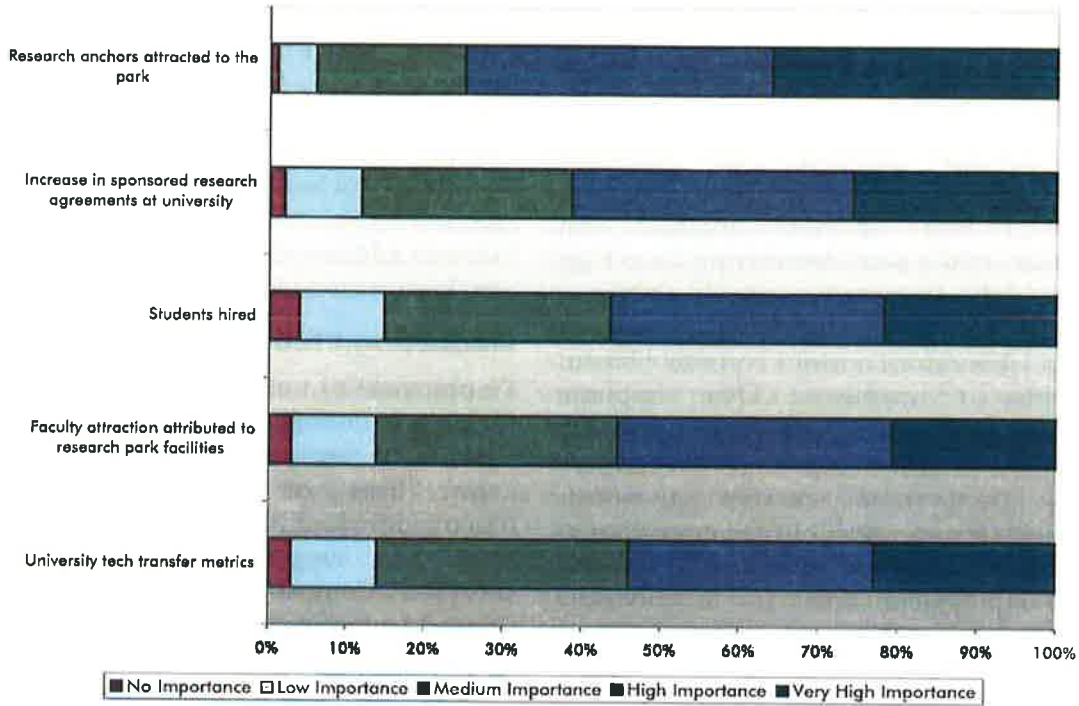
Employment in university research parks has regional economic benefits that extend far beyond a particular job or one individual's salary. These core research and technology-based industries have interdependent relationships with suppliers of other goods and services. Companies in research parks both depend upon and support others locally as well as nationally for various services (e.g., legal, marketing, waste disposal, transportation). As a result, the research park sector as a whole has an impact greater than the number of its total jobs might suggest.

To measure the true, extended reach or impact of jobs within university research parks, a set of state- and industry-specific multipliers must be used. Multipliers quantify the ripple effect discussed here where one industry or group of industries supports or creates additional economic entities including jobs, taxes and public revenues, and spending from the salaries of industry workers.

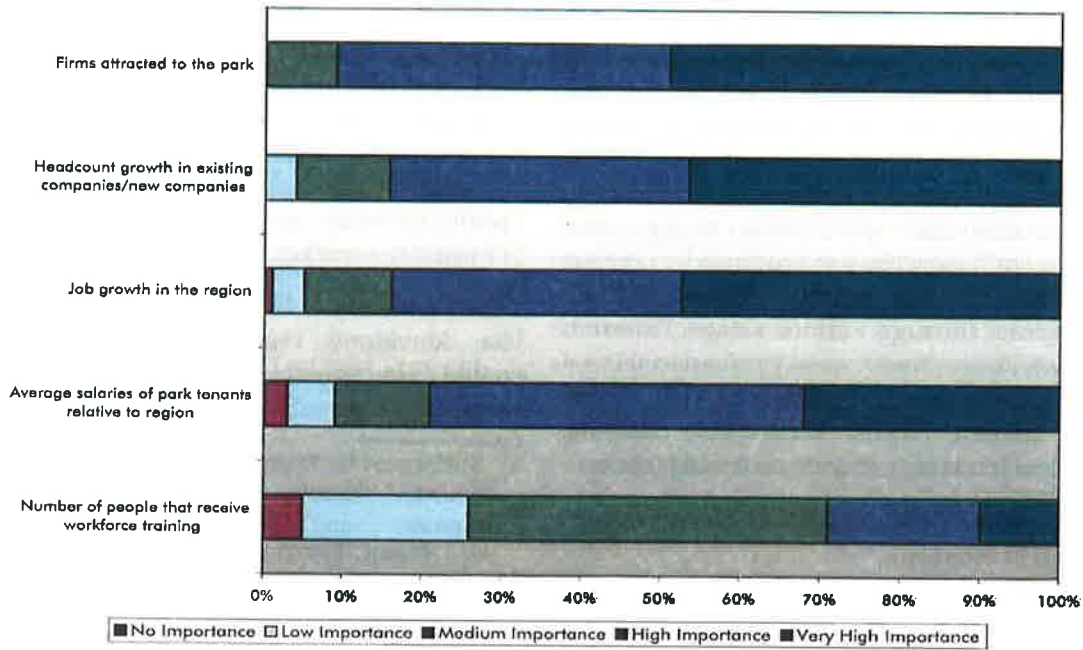
The Bureau of Economic Analysis (BEA) has developed region-specific factors that enable this impact analysis.<sup>3</sup> The direct-effect employment multipliers from BEA are used in

<sup>3</sup> BEA uses its "Regional Input-Output Modeling System," known as RIMS II, for calculating region- and industry-specific multipliers purchased for this analysis. For additional information on these multipliers, see <http://www.bea.gov/bea/regional/rims/>. Multipliers were not purchased for Canadian provinces; instead, multipliers for the state or states nearest to these provinces were used.

**Figure 8. Importance of Methods for Measuring Benefits of a Park to its Affiliated University**



**Figure 9. Importance of Methods for Measuring Benefits of a Park to its Community**



this analysis to tabulate the unique state and industry impact factors for each major industry of research park tenants. The multipliers represent the total change in number of jobs in all industries (direct, indirect, and induced effects) that result from a change of one job in the corresponding industry sector.

The total indirect and induced employment impact of the 264,413 university research park jobs reported by the parks that provided employment data is an additional 414,738 jobs throughout the U.S. and Canadian economies in all sectors. Taken together, the direct, indirect, and induced research park employment impacts account for a total employment impact of 679,151 jobs (Table 8). This analysis yields a total direct-effect employment multiplier of 2.57.

In order to account for and quantify the full employment levels and impacts of those existing research parks that did not respond to the 2007 survey or did not provide employment detail within the survey, Battelle applied median employment levels (750) and the overall average direct-effect employment multiplier for research parks. The 39 parks that were not accounted for might be estimated to employ an additional 29,250. This boosts the university research park total employment figure to 300,616.

The “core” employment metric does not increase on a full one to one basis as some of these additional 29,250 employees are in “support” or other non-core jobs. Using the core-to-total share against these additional jobs, total core employment rises to 292,914. The overall university research park multiplier (2.57), when applied to this larger core employment figure boosts the total employment impact of all research parks to 752,355.

It is important to note that the multipliers in Table 8 represent a blending of all individual state and provincial responses that were then rolled up into these major industry sectors. Thus, these multipliers represent an overall metric that, for any one specific state, may under- or over-estimate the actual employment impact. For example, the scientific R&D state multipliers range from 1.60 to 2.78. The mix of

states and employment levels within this sector contribute to the overall blended 2.43 multiplier shown in Table 8.

To calculate the total employment impacts of each industry and the total for university research parks, it was necessary to collect specific information as to whether a given firm’s activities were primarily R&D in nature. The BEA multipliers include a specific scientific R&D industry sector applied to each firm identified as such. Thus, Table 8 details research park employment in industries allocated for these multipliers including a large separate R&D employment total that spans almost every major industry group shown.

For example, overall employment in the drugs and pharmaceuticals sector was 28,007 as shown in Table 4. Research park directors surveyed indicated that, for 90 percent of these jobs, the primary function was R&D in nature. Thus, in Table 8, only 2,897 of that original 28,007 was allocated to the drugs and pharmaceuticals industry; the remainder is allocated to the overall scientific R&D sector.

As shown in Table 8, scientific R&D workers in university research parks number more than 125,000 and their total employment impact is nearly two and one-half times this figure at nearly 305,000 total jobs. The software industry’s nearly 14,000 jobs have a total employment impact of almost 44,000. Aerospace and defense companies also have a high relative impact, with their approximately 6,400 jobs having a total employment impact of more than 23,500.

Other research park industries with relatively high employment multipliers include drugs and pharmaceuticals (5.64), computer and related hardware (4.48), agricultural biosciences (4.43), and alternative/renewable energy (4.16). These and other high-impact industries might be strategically targeted in future development efforts of research parks as those providing significant overall economic payoffs at the regional level.

Individual research parks have commissioned studies that have shown significant regional impact (see text box).

**Table 8. Research Park Employment by Detailed Industry Allocated for Economic Impact Analysis**

Industry Employment Allocated for Multipliers	Current Park Employment	Direct-Effect Employment Multiplier	Total Employment Impact
<b>Total core park employment</b>	<b>264,413</b>	<b>2.57</b>	<b>679,151</b>
Scientific R&D	125,280	2.43	304,691
Software	13,893	3.16	43,964
Aerospace/Defense	6,417	3.68	23,592
Healthcare Services	8,603	2.23	19,156
Centralized Business Support Services	11,134	1.60	17,781
Computers and Related Hardware	3,919	4.48	17,561
Drugs/Pharmaceuticals/Diagnostics	2,897	5.64	16,345
Management/General Business Consulting/Services	7,810	1.93	15,082
Advanced Materials	3,950	3.81	15,048
Communications Equipment	5,049	2.91	14,696
Scientific and Engineering Services	5,688	2.04	11,587
Medical Instruments and Devices	1,895	3.56	6,751
Laboratories (medical, biological, environmental testing)	2,004	2.28	4,566
Instrumentation and Sensors	1,159	2.67	3,097
Colleges/Universities (nonresearch)	1,772	1.62	2,870
Insurance	913	2.85	2,601
Other Government	815	2.39	1,949
Ag/Plant Biosciences and Related Chemicals	380	4.43	1,682
Environmental Consulting/Services	763	1.72	1,316
Alternative/Renewable Energy	302	4.16	1,256
Other Electronics	152	2.89	440
Misc. Manufacturing	36	2.32	84
Other core employment, not classified	59,583	2.57	153,039

Note: The Other Bioscience R&D and Other Scientific R&D industries shown in Table 4 do not appear in Table 8 as they are included entirely within the overall Scientific R&D industry.

#### **University Research Parks Generate Significant Economic Impacts**

A 2003 study of the economic impacts of the Iowa State University Research Park found that the park links directly to almost \$88 million in industrial output. Businesses that provide services to park customers and employers generate an additional \$46.3 million, for a total impact of \$1.34 billion. The park employed 900 Iowans, with an average wage of \$40,000.\*

A study of the economic impacts of the University of Arizona Science and Technology Park found that the park contributed \$1.9 billion to the economy of Tucson and Pima County during fiscal year 2003 to 2004. Total job impact was 13,300 jobs.\*\*

\*David Swenson, *The Economic Values of the ISU Research Park and its Tenants*, Department of Economics, Iowa State University, February 2003, [http://www.isupark.org/news/pdf/economic\\_value\\_study.pdf](http://www.isupark.org/news/pdf/economic_value_study.pdf).

\*\*Vera Pavlakovich-Kochi and Alberto H. Charney, *Economic and Tax Revenue Impacts of The University of Arizona Science and Technology Park During FY 2003-2004*, The University of Arizona, March 2005, [http://oepa.arizona.edu/Lib/Media/Docs/2005\\_uastp\\_impact\\_study.pdf](http://oepa.arizona.edu/Lib/Media/Docs/2005_uastp_impact_study.pdf).



## TRENDS IN UNIVERSITY RESEARCH PARK DEVELOPMENT

### Research Parks Today

As stated previously, the research park model has evolved significantly during the past 40 years. This section describes today's research parks and key trends impacting their future evolution.

**Research parks have grown at a steady pace during the past three decades.** Of the total number of parks that responded to the survey, 6 percent were established in the 1970s; 28 percent in the 1980s; 32 percent in the 1990s; and 30 percent so far in this decade. The majority of the respondents are continuing to construct new buildings. Seventy-four percent of the respondents reported that they had completed a building between 2004 and the present.

**The majority of research parks continue to be developed in suburban areas, although activity is increasing in urban areas.** Approximately 60 percent of all parks responding to the survey are located in suburban areas. Of those parks established in the 1980s, 54 percent were located in suburban areas; in the 1990s, this number rose to 63 percent. From 2000 to 2003, 73 percent of new parks created were located in suburban areas; however, 53 percent of parks created since 2004 are located in urban areas.

**Research parks are considered an effective tool to spur homegrown business retention and expansion.** Research parks traditionally were established to recruit R&D and technology companies to locate near a university to build a cluster of high-wage companies. Today, the vast majority of parks report that a primary goal of their park is to serve as a location for existing businesses in the region to grow and expand. Respectively, more than 50 percent and 27 percent of the respondents indicated that growing existing companies is a very high or high priority for their park.

### Key Findings

- **Research parks have grown at a steady pace during the past three decades**
- **The majority of parks continue to be developed in suburban areas, although activity is increasing in urban areas**
- **Research parks are considered an effective tool to spur homegrown business retention and expansion**
- **Research parks are placing greater emphasis on incubation and entrepreneurship**
- **Research parks are succeeding in growing new companies that remain in the region**
- **Research parks are focusing on targeted industry clusters**
- **Research parks are being viewed as a commitment to economic development**
- **Tenants locate in research parks to access a skilled workforce**
- **Research parks use various mechanisms to support university-industry relationships**

**Research parks are placing greater emphasis on supporting incubation and entrepreneurship to grow their future tenant base.** Of the research park directors responding to the survey, 95 percent indicated that creating an environment that encourages innovation and entrepreneurship is a high priority, with 71 percent indicating it as a very high priority for their park. As a result of the focus on incubation, 60 percent of the research parks reported that their tenants are more likely to be smaller, start-up enterprises or corporate lablets rather than the large companies of 5 to 10 years ago. Somewhat surprisingly,

**Research Parks are Focusing Increasingly on Incubation of Emerging Companies: Purdue**

Begun in 1961 as a conventional office park that buffered the Purdue campus from other uses, the **Purdue Research Park** re-invented itself in the 1990s, focusing heavily on business incubation.

Purdue Research Foundation, the owner of the park, built on the success of an existing multitenant building, supported by a variety of business-acceleration programs also managed by the Research Foundation, such as the Gateways program for entrepreneurial development and the Trask Fund for precommercialization research.

By investing its endowment funds and leveraging tax-increment financing through the state's Certified Technology Park program, Purdue more than quintupled the acreage of the park and added a new incubator (since doubled in size) as well as a second multitenant building. This growth has brought the space dedicated to small and emerging businesses to more than 200,000 square feet.

the percentage of multitenant buildings being built has decreased as a percentage of total new buildings built. In the 1980s, 53 percent of the buildings constructed in university research

**Research Parks Are Succeeding in Incubating and Growing Companies**

- Nearly 800 firms graduated from park incubators in the past 5 years
- About one-quarter of these graduates remain in the park
- Only 13 percent failed
- Less than 10 percent left the region

parks were multitenant buildings; in the 1990s, 50 percent were multitenant; but, since 2000, only 39 percent of the new buildings constructed have been multitenant. Yet, examples of parks exist, such as the Chicago Technology Park, that are primarily multitenant.

University research parks are succeeding in incubating and retaining start-up firms in the community. Fifty-nine parks reported graduating a total of 759 firms from a park incubator during the past 5 years. Of these, 62.5 percent remain in the region: 156 (20.6 percent) moved to multitenant space within the park, 19 (2.5 percent) moved to their own building in the park, and 299 (39.4 percent) left the park but remain in the community (Table 9). Of the remainder, 15.1 percent were acquired or merged, 12.8 percent are no longer in business, and only 9.6 percent left the region.

**Table 9. Incubator Graduates**

Number of Graduates Who	Number of Firms	Percentage of Total
Left the park but remain in the community	299	39.4%
Moved to multitenant space within the park	156	20.6%
Acquired or merged; and other outcomes	115	15.1%
Are no longer in business	97	12.8%
Left the region	73	9.6%
Moved to own building in the park	19	2.5%
<b>TOTAL</b>	<b>759</b>	<b>100.0%</b>



Research parks are more likely to be targeted to particular niche areas. To compete in technology development, a region or state in its economic development efforts must differentiate itself and cultivate and sustain specialized areas of expertise where it can be a world leader. As the National Governors' Association in its *Governor's Guide to Trade and Global Competitiveness* explains: "Each state must exploit the unique advantages it has relative to other states and build on the strengths found in its local "clusters of innovation"—distinct groups of competing and cooperating companies, suppliers, service providers, and research institutions."<sup>4</sup>

#### **Research Parks Are Focusing on Niche Expertise**

The 265-acre Clemson Research Park, originally developed by the South Carolina Research Authority in Anderson, 9 miles from campus, was once filled with companies with few clear connections to the university's research strengths.

In 2006, the university and Anderson County announced a reinvention of the park, under which it will be renamed the **Clemson University Advanced Materials Center** and will be anchored by the university's 111,000-square-foot Advanced Materials Research Laboratory.

The park will target global-scale advanced materials companies and will also have a new-business incubator. It complements the Clemson University International Center for Automotive Research (CU-ICAR), another research park being developed 30 miles to the northeast in Greenville. CU-ICAR is also off the main Clemson campus but is being anchored by another specialized university facility, the Carroll A. Campbell Jr. Graduate Engineering Center.

The need to drive economic growth through focus areas is not a new concept in state and regional economic development. Different today, however, is the emphasis placed on technology-based innovation. A region's ability to lead in technology innovation and deployment in specific focus areas is becoming a critical and defining driver of economic competitiveness.

This approach can be seen in the number of research parks focusing on specific technology areas. Bioscience is the most common focus area for specialized research parks; but, examples of parks exist in other sectors, such as Clemson University's Advanced Materials Center and Cornell's Agriculture and Food Technology Park (see text boxes).

#### **Universities Are Developing Very Focused Niche Parks: Cornell's 'Technology Farm'**

**Cornell's Agriculture and Food Technology Park** (also known as the Technology Farm) targets the specific strengths of the university's New York State Agricultural Experiment Station in Geneva, a satellite agricultural research center 45 miles from the main campus in Ithaca.

While all animal research takes place in Ithaca, Geneva is home to 50 university faculty members and 250 staff specializing in the basic science and applied-technology needs of New York State fruit and vegetable growers (including the nearby Finger Lakes vintners) and food processors.

Anchored by the planned expansion of a USDA Agricultural Research Service germplasm repository into a major National Grape Genetics Lab, the 74-acre research park is a cooperative effort of the university, the city, the county, and the local utility company.

It includes a 20,000-square-foot multitenant "flex" building for commercial use and upgraded pilot-plant facilities for the food and beverage industries.

<sup>4</sup> *Governor's Guide to Trade and Global Competitiveness*, National Governors' Association, 2002, p. 5, <http://www.nga.org/Files/pdf/AM02TRADE.pdf>.

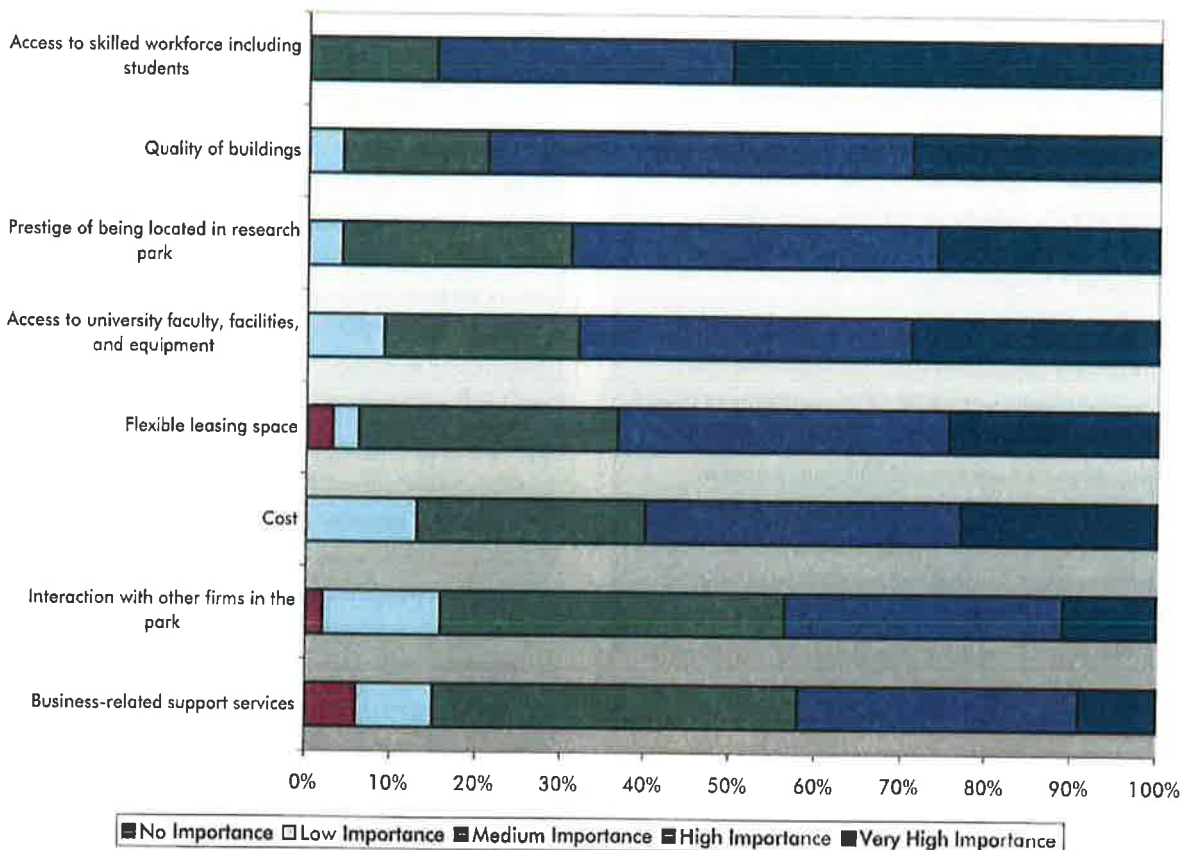
Research parks are being viewed more as an expression of commitment to economic development. In the past; many research parks were primarily viewed as a passive real-estate investment with limited university involvement or presence. That is not the case today as the results in this report document. Two-thirds of respondents indicated closer involvement by university leadership and more emphasis on university involvement in the past 5 to 10 years.

Park directors report that the primary reason why tenants locate in a university research park is to access a skilled workforce, including students. Eighty-five percent of the respondents indicated that access to a skilled workforce was of high or very high importance to tenants. Other attributes of a university research park that are important to tenants are the quality

of buildings; the prestige of being located in a research park; and access to university faculty, facilities, and equipment (Figure 10).

University research parks use various mechanisms to foster university-industry relationships. The most effective include having partnership-developer staff or others charged with relationship building between industry and departments, availability of university core user facilities open to industry, human resource matching programs such as internships and co-ops, and access to university research labs and university technology transfer and commercialization offices. Pilot plants or demonstration labs open to industry and university educational course offerings available at the park are of lesser importance (Figure 11).

Figure 10. Reasons Why Tenants Locate in University Research Parks





**Figure 11. Importance of Various University-Industry Partnership Mechanisms**

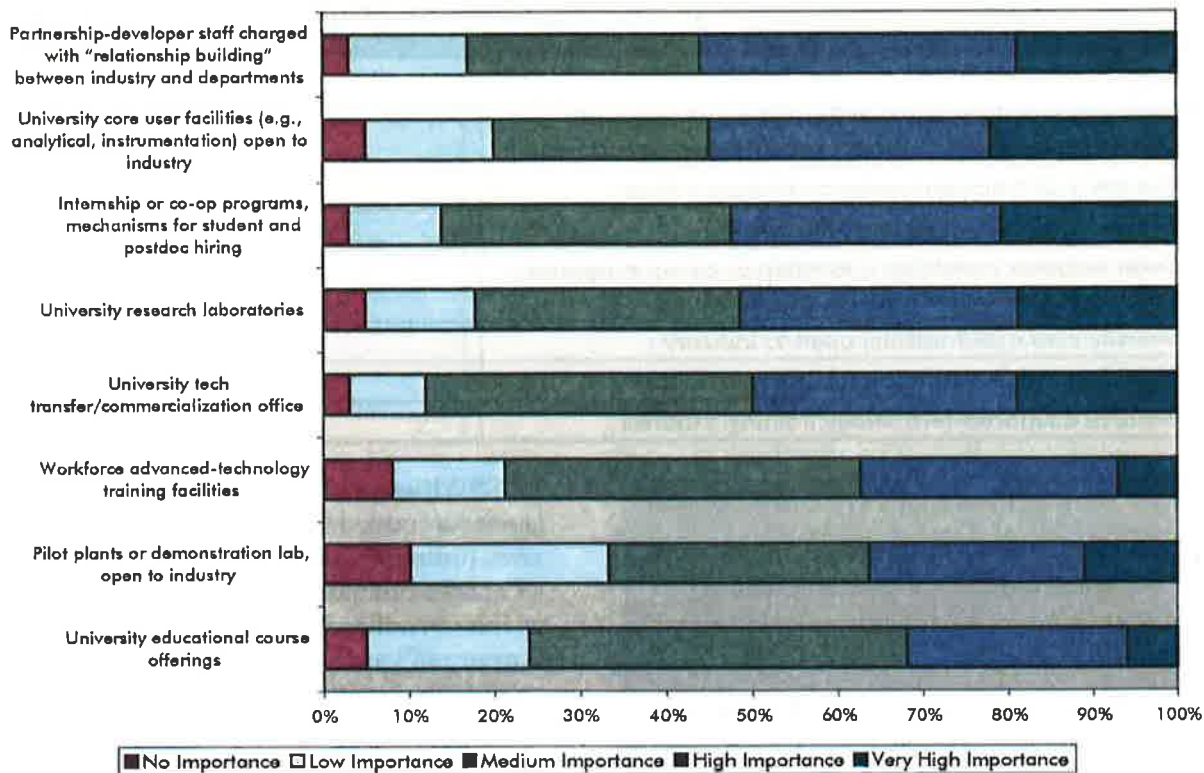


Table 10 shows the number of parks that reported having specific university-industry partnership mechanisms. The large number of responses across the mechanisms for university-industry partnerships suggests that parks, recognizing the differing needs among industries, areas, and firms, are offering not only one but a menu of methods for park tenants to engage and work with higher-education institutions. Universities and research park managers should continue and expand these menus because one size *does not fit* all. No one mechanism is sufficient; a number of mechanisms must be used concurrently. While this will be discussed further in "The 21st Century Research Park: Challenges and Opportunities" section of this report, parks are starting to increase their focus on the talent or workforce issue through internship or co-op programs, but generally have not moved further along the talent continuum of interventions to course offerings or training facilities.

### University Research Parks of the Future

A new model—strategically planned mixed-use campus expansions—is emerging that involves shared space in which industry and academic researchers can work side by side. These university-affiliated mixed-use campus developments are not simply real-estate activities. They embody a commitment by universities to partake in broader activities, offering companies high-value sites for accessing researchers, specialized facilities, and students and promoting live-work-play environments. Key features of these mixed-use developments include the following:

- Substantial space for significant future research growth
- Planned multitenant facilities to house researchers and companies
- Housing and other amenities attractive to young faculty, postdocs, and graduate students

**Table 10. University-Industry Partnership Mechanisms Offered by Parks**

Mechanism	Number of Parks Offering Mechanism
University research labs	78
Partnership-development staff or others charged with "relationship building" between industry and departments	70
University tech transfer/commercialization offices	65
University educational course offerings	64
Human resource matching: internship or co-op programs, mechanisms for student and postdoc hiring	62
University core user facilities, open to industry	58
Pilot plants or demonstration lab, open to industry	44
Workforce advanced-technology training facilities	39

**The Future of Research Park Development**

- A new model—strategically planned mixed-use campus expansions that include space for academic and industrial uses—emerges
- On-site amenities are critical to attract innovation employees
- Research parks serve an effective tool to spur urban revitalization
- Research parks are used to leverage assets of non-university R&D organizations
- Research parks become leaders in sustainable design
- Research parks embrace global focus

- Flexible development options, some led by universities and others led by developers.

Greater emphasis is being placed on providing a range of amenities in addition to office and lab facilities. North Carolina State's Centennial Campus is a leading example of a mixed-use campus (see text box on next page). The University of California at San Francisco (UCSF)/Mission Bay development, the University of South Carolina's (USC)/Innovista, and the Piedmont Triad Research Park in Winston-Salem (see text box on page 26) offer additional examples of the research park of the 21st century.

- **UCSF/Mission Bay.** Mission Bay comprises layers of mixed uses, all surrounding a new research campus for UCSF built on 43 acres donated to the university as part of the overall redevelopment of a 303-acre former rail yard. The UCSF campus itself is mixed use, including four major bioscience laboratory buildings; housing for more than 800 faculty, students, and staff; a community center; a childcare center; two garages; and a central green space.

That institutional core is adjoined by an additional 14.5 acres set aside for a planned 289-bed hospital center and by space for commercial bioscience uses being developed by both nonprofit and for-profit owners. Finally, both areas are buffered from downtown by a larger area for general office and retail development, along with thousands of more housing units (many affordable). The live-work population of the entire redevelopment district is projected to reach 9,000 by 2020.

- **USC/Innovista.** USC is collaborating with private developers on a 200-acre, mixed-use, live-work zone in downtown Columbia called Innovista. Connecting the city's arts district to the riverfront, Innovista will have several "neighborhoods" that parallel faculty cluster-hiring initiatives supported by the state through its Centers of Economic Excellence program, and infrastructure financing through the state's Life Sciences

## Centennial Campus at North Carolina State in Raleigh NC

Example of a university-affiliated research park development as part of larger-scale mixed-use developments:

In the 1980s, pressure for space at the main North Carolina State University (NCSU) campus in Raleigh led to exploration of nearby options, including substantial holdings by the state mental-health system and the Diocese of Raleigh on 1,000 acres surrounding the old Lake Raleigh Reservoir. Starting in the 1980s, the land was conveyed to NCSU in stages, and serious planning began with the appointment of a former dean of the university's School of Design to the position of campus coordinator. At the outset, Centennial was conceived as a "smart growth" community that would incorporate a live-work environment and minimize the need for driving through its envisioned light-rail connector to the main campus. (The connector is still not built, but its functions have been assumed by the campus bus

system.) The plan for Centennial evolved into a unique combination of institutional and commercial space side-by-side in a dual-use "campus of the future." The campus is divided into "neighborhoods" serving diverse high-tech sectors, each focusing on programmatic strengths of the university. First to move was the College of Textiles, followed by the research (and now the instructional) components of the College of Engineering and selected units of other colleges. In 2002, some 200 additional acres already owned by the university and home to its College of Veterinary Medicine were renamed "Centennial Biomedical Campus" and will be developed using the Centennial Campus model. In all, 1,334 acres will be developed, and the campus is still at less than 20 percent of its anticipated total square footage.

Act. Each neighborhood features at least one academic building owned by the university and one building for commercial research partners financed by private developers. The currently planned neighborhoods serve "future energy," public health, and biomedical uses.

**Amenities will be an important offering of future research parks.** On-site amenities, such as restaurants and retail stores, are considered important in attracting innovation employees; yet, the number of parks reporting such development was fairly small. Three-quarters of the respondents indicated a greater emphasis on amenities within the park now than 5 to 10 years ago. But, while 45 parks indicated that their parks included university-only and specialized facilities, only 35 indicated that their park contained a conference center, 21 reported the presence of a hotel, 21 have retail shops, and 20 include on-site housing. These small numbers may indicate that parks have not yet been able to incorporate amenities

or are having difficulty finding the financing to develop them. It may also be easier to address some elements in an urban rather than a suburban setting.

**University Park at the Massachusetts Institute of Technology** exemplifies a park including various amenities. In addition to 1.5 million square feet of wet-lab facilities in nine buildings and 674 residential units in five buildings, the park includes the following:

- A 210-room hotel and conference center
- Two restaurants
- A health club
- A full-service grocery store
- Banking services
- A childcare center.

**Research parks are being developed in urban areas as a component of neighborhood revitalization plans**, such as the park under development adjacent to Johns Hopkins University in Baltimore, the Center of Research,



**Research Parks and Urban  
Redevelopment: Piedmont Triad**

Some 200 acres of historic downtown Winston-Salem NC are being transformed by **Piedmont Triad Research Park**, anchored by a new biomedical research campus for Wake Forest University Health Sciences and other educational facilities.

The park, divided into three districts, has a master plan calling for ultimate buildout to 5.7 million square feet. In addition to research facilities for the university and commercial tenants, the park will include office buildings, retail shops, restaurants, and some residential housing.

Complementing other downtown revitalization initiatives, the park will honor the urban street grid, connecting new buildings and surrounding "urban park" open space to existing historic structures and retail clusters in the city's core.

Both bioscience and IT tenants occupy several new multitenant buildings. The park also includes space for a satellite office of the North Carolina Biotechnology Center and for a node on the state's network of biomanufacturing training facilities at community colleges and state universities.

Technology and Entrepreneurial Exchange (CORTEX) in St. Louis, and Piedmont Triad Research Park in Winston-Salem (see text box). But, nearly half the respondents indicated that they did not think there was more emphasis on parks being built as part of a revitalization effort rather than as a greenfield development.

Research parks are being developed to leverage the assets of non-university R&D organizations such as federal laboratories. In addition to universities, major medical research centers and public and private research organizations can be key drivers of TBED. It is becoming increasingly common for

communities in which a federal laboratory is located to create a research park to leverage laboratory resources to realize economic development.

Federal laboratories attract companies that wish to leverage the expertise of the laboratory researchers and to gain access to highly specialized, and often unique, facilities and equipment. Research parks can also provide a location for start-up companies that are created to commercialize technology developed in the lab and for lab contractors.

**Sandia Science and Technology Park**, the National Aeronautics and Space Administration (NASA) **Research Park @ NASA Ames**, and the **Tri-Cities Science and Technology Research Park** located close to the Pacific Northwest National Laboratory are examples of research parks that have been developed by or adjacent to federal laboratories. Another example, the **East Tennessee Technology Park** at Oak Ridge National Laboratory, is described in the text box on the next page.

More emphasis is being placed on sustainability as a design principle. Sustainable development involves balancing development needs against protection of the natural environment so that needs can be met now and in the future. Such development takes into account economic, environmental, and social considerations. In the future, it is likely that research parks will be developed to minimize impact on the environment and to use renewable energy sources and "green" building practices. "Green" building practices refers to the design and construction of buildings in such a way that it increases the efficiency of the building and its use of energy, water, and materials while at the same time reducing the building impacts on human health and the environment through better design, construction, operation, and maintenance. Two-thirds of the respondents indicated that there has been an increase in the emphasis on sustainability in the past 5 to 10 years and this trend is likely to continue. Vancouver Island Technology Park exemplifies

### **Research Parks Are Developing in Partnership with Federal Labs**

As Oak Ridge National Laboratory (ORNL) reduces the amount of land needed to carry out its missions for the U.S. Department of Energy (DOE), the park contractor (a joint venture of Battelle and the University of Tennessee [UT]) is focusing on the research park model to reuse land and contribute to regional economic development.

Several related initiatives are under way or proposed. For several years, the Community Reuse Organization of East Tennessee (CROET) has been marketing East Tennessee Technology Park, comprising 7,000 unneeded acres at both the historic gaseous diffusion plant and a greenfield site nearby.

Last year, the DOE lab announced it would lease 40 additional acres on the active ORNL research campus to CROET for Oak Ridge Science and Technology Park, which will provide programmatic support for substantive interaction between companies and ORNL researchers. Two 100,000-square-foot buildings are under construction by private owners, one an engineering services contractor and the other a developer of multitenant space.

These developments have spurred complementary research or technology-park initiatives at the UT Knoxville campus and on private land elsewhere in what is now being branded as the "Oak Ridge Innovation Valley."

### **Vancouver Island Technology Park Achieves LEED Gold Certification**

The University of Victoria created the Vancouver Island Technology Park in 2001 to promote academic, industry, and government collaboration designed to lead to the establishment and maintenance of research and technology-based facilities in British Columbia. The park was developed on 35 acres and used a former hospital as its first building. This building, developed as a "green building," has since been certified as the first Leadership in Environmental and Energy Design (LEED) Gold Certified Building in Canada. (LEED is a rating system developed by the U.S. Green Building Council.)

Some of the actions taken to make the park green included the following:

- Reduce overall potable water use by using waterless urinals, dual flush toilets, and Sensor Flush.
- Limit the use of potable water for landscaping irrigation by planting native plant species.
- Recharge the water table with storm water filtered through grass and gravel parking.
- Filter polluting substances and sediments out of storm water run-off from vehicle parking and roads before it leaves the site by using Water Filtration.
- Create moderate microclimate with vegetative cover. Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.
- Conserve and/or create native plantings and wildlife habitat through appropriate landscaping strategies.
- Minimize potentially harmful chemical pollution in managing indoor and outdoor plant and structural pests by not using pesticide products on landscaping.
- Reduce disposal of waste materials in landfills by providing on-site recycling facility.



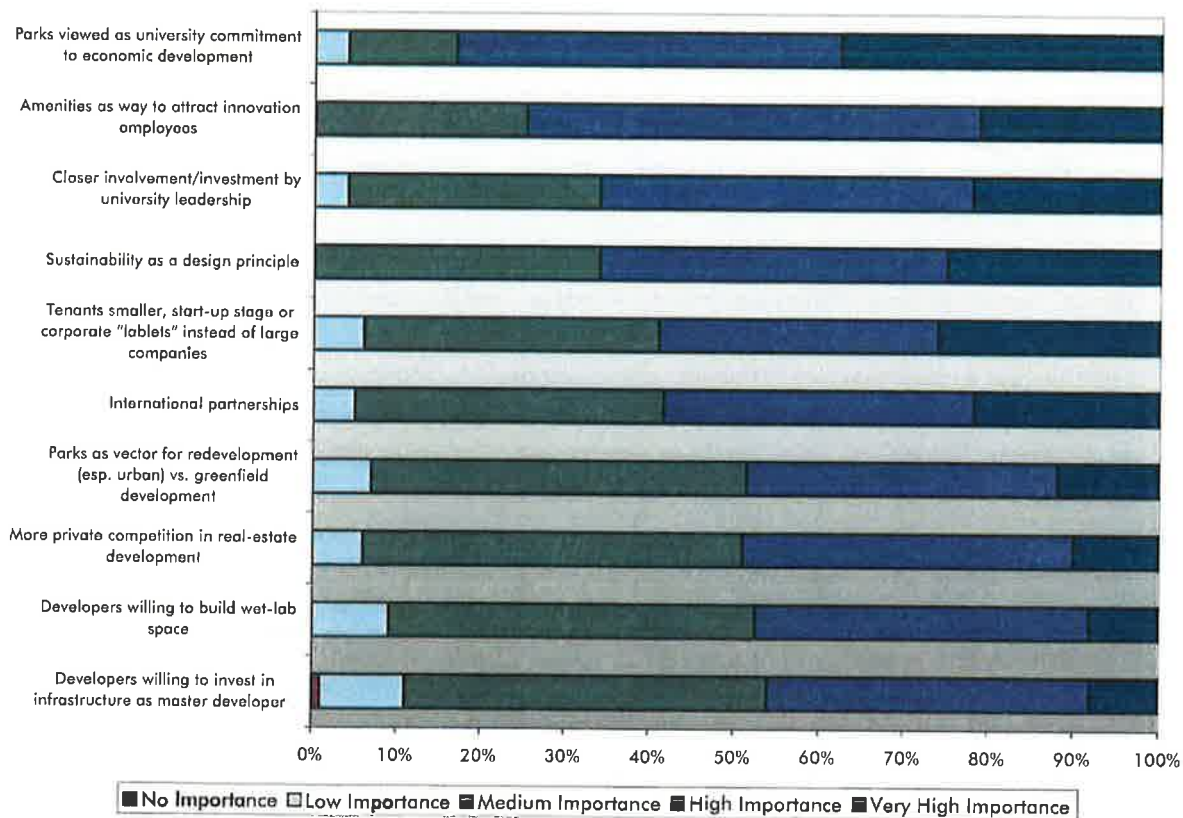
a park that has adopted sustainability as a design principle that would attract tenants, which has proved to be the case according to park management (see text box on page 27).

**International partnerships are becoming more important in university research parks.** Sixty percent of the research parks surveyed indicate that there was more emphasis on international partnerships in the past 5 to 10 years than previously, and park directors said that they expected to see parks attracting more international tenants and having more of a global focus in the future. Forty-five percent of the respondents replied that serving as a landing pad for the recruitment of both national and international industry to a region is a very high priority; another 34 percent indicate that it is a high priority.

**University Research Park in Madison WI** has signed a formal agreement with the Biotechnology Innovation Center in Frankfurt, Germany. The purpose of the agreement is to encourage strategic collaborations between researchers and companies in each of the parks. It is anticipated that the companies in each park will be made aware of the capabilities and expertise of the companies in the other park. The parks will also share information on research park operations and best practices in areas such as workforce development, technology transfer, venture capital, and business incubation.

Figure 12 summarizes the respondents' views on the changes that have occurred in university research parks during the past 5 to 10 years.

**Figure 12. Importance of Changes in Research Parks in Past 5 to 10 Years**



## **Summary**

Today's university research parks seek to create meaningful linkages between the university's resources and capabilities and the companies located in the research park. Providing a physical location that promotes such interaction can effectively stimulate innovation and generate economic activity. But, as tenants and sponsoring institutions require more of university research parks, the parks are challenged to meet both rising expectations and the demands being placed on them, such as providing amenities, services, and live-work-play environments.





## THE 21ST CENTURY RESEARCH PARK: CHALLENGES AND OPPORTUNITIES

These survey results show the emergence of a new recipe for research park development—much different than the model that emerged in the 1960s and 1970s (Figure 13). Most older research parks focused on recruiting firms as tenants; but, these firms interacted very little or not at all with researchers at the nearby university or federal laboratory. Most parks were developed as “green space,” and few included university facilities. The 21st century model evolving today is based on the following:

- Building a strong entrepreneurial development focus that seeks to recruit and support entrepreneurs from the university and community in a “grow-our-own” approach.
- Offering tenants multiple ways to interact with a university, such as providing access

to specialized labs, employing students as interns, using university services and support, and interacting with researchers at university facilities located in the park.

- Adding amenities, such as service support, retail and commercial establishments, and, in some instances, residential housing nearby as part of the development scheme.
- Tailoring more varied approaches to development, including working with developers on a per-parcel or per-site basis and addressing demands for both single-tenant and multitenant facilities.

The University of Maryland–College Park M Square Research Park is an example of a park being developed along these lines (Figure 14).

RTP is evolving to respond to today’s needs (see text box on page 33).

**Figure 13. Evolution of University Research Parks**

Early Parks: Stand-Alone Physical Space	1990s: Connections	2000 and Beyond: Economic Driver for the Region
<ul style="list-style-type: none"> <li>▪ Real-estate operations</li> <li>▪ Campus-like environment, selling single parcels of land</li> <li>▪ Focus on industrial recruitment</li> <li>▪ Few, if any, ties between tenants and university or federal laboratories</li> <li>▪ Little provided in terms of business assistance or services</li> </ul>	<ul style="list-style-type: none"> <li>▪ Anchor with R&amp;D facilities aligned with industry focus of park</li> <li>▪ Innovation Centers and technology incubators more common</li> <li>▪ Multitenant facilities constructed to accommodate smaller companies</li> <li>▪ Some support for entrepreneurs and start-up companies provided directly</li> </ul>	<ul style="list-style-type: none"> <li>▪ More and more mixed-use development, including commercial and residential</li> <li>▪ Increased focus and deeper service support to start-ups and entrepreneurs</li> <li>▪ Less focus on recruitment</li> <li>▪ Formal accelerator space and plans for technology commercialization roles emerge</li> <li>▪ Greater interest on part of tenant firms in partnering with universities</li> <li>▪ Universities more committed to partnering with research park tenants</li> <li>▪ Amenities from day care to conference and recreational facilities added</li> </ul>

Figure 14. M Square, University of Maryland Research Park





### **The Research Triangle Park—Building on a Legacy for Future Sustainability**

RTP was founded in 1959 by government, university, and business leaders as a model for research, innovation, and economic development. By establishing a place where educators, researchers, and businesses could collaborate as partners, the RTP founders hoped to change the economic composition of the region and state, thereby increasing opportunities for North Carolina citizens.

RTP is one of the oldest and largest examples of positive impact on an economy by strategic investments in education, infrastructure, and business climate. RTP's success was built around its first-mover status in research parks, its ability to build a critical mass of technology companies and knowledge workers, and its linkages to the region's universities' R&D strengths. RTP's future success will depend on its ability to build on its strengths and address global and technology trends.

Over the past 50 years, the vision for RTP has transformed into the leading and largest planned research park in North America, recognized around the globe for its world-class R&D companies and contributions. Spanning 7,000 total acres, with 20 million square feet of developed space, RTP is currently home to over 157 companies employing more than 39,000 knowledge workers in a wide array of industries. RTP is steeped in deep and robust relationships with three world-class research universities in close proximity: Duke University in Durham; NCSU in Raleigh; and the University of North Carolina at Chapel Hill.

As the Research Triangle region has grown both outward and inward toward RTP, a host of amenities has developed around RTP. Currently, major initiatives are under way to re-develop older RTP properties and encourage retail and residential development in parcels directly surrounding the park. Within a 4-mile radius of RTP's boundaries, 13 million square feet of built space and 15,000 acres are under development for office, commercial, retail, and industrial uses. In the same area, there are more than 40,550 housing units, offering executive housing, single-family homes, townhouses, and apartment units. The developments around RTP have contributed to a unique urban landmass with a tremendous impact on the region's and state's economic vitality and dynamism. No other campus location in the Research Triangle region has comparable access to such a broad mix of housing and retail opportunities.

Because of its history of success, first-mover advantage, and grand scale and vision, RTP is uniquely positioned to evolve once again and accomplish first-mover advantage among research parks. Building on historically low-density development and incorporating the best of new urban design standards, RTP is influencing a new urban land form characterized by mixed-use developments close to world-class R&D operations placing increasing importance on green building, carbon neutrality, and environmental sustainability. RTP incorporates the best of historical research park principles with the best of new urban design standards.

RTP is committed to remaining a place where companies and academic talent can come together. RTP's scale makes it possible to be transformational, to maintain its status as a vital economic engine for the region, and to compete on a global level. The opportunity to marshal the collective resources of RTP's world-class R&D firms and research university connections will enable RTP to be a leader in forging a new, "next generation" model to ensure that it remains a place where world-class knowledge workers and R&D operations will congregate and develop the future's great ideas.

## Challenges

Research parks are an important component of the innovation infrastructure needed to support today's knowledge economy, much as roads, bridges, and rail were critical to yesterday's industrial economy. Research parks have evolved and matured to become more integrally related to their higher-education partners and technology-driven tenants. **But, there is still an unfinished agenda.** This survey found that all aspects of the multidimensional components of a business-higher-education partnership have not fully developed and research parks face challenges as they continue to try to respond to the demands placed on them.

Among the key challenges facing research park directors and institutions developing a research park are the following:

- **Difficulties experienced in commercializing technology.** While university research parks can lead to commercialization of new technologies by promoting relationships between researchers and companies, moving innovation into the marketplace does not happen naturally or easily for several reasons. First, university-developed technologies often require additional work to determine their commercial potential, but little funding is available for such proof-of-concept activities. Second, even if commercial potential can be demonstrated, investors and customers are often unwilling to assume the risk associated with new technology; small entrepreneurial businesses, increasingly the focus of research parks, generally lack the financing necessary to identify and promote new technologies. Third, academic researchers often do not understand the marketplace and therefore do not know the commercial potential of their discoveries. A challenge for research parks will be to provide support services to ease the commercialization process. While some universities are trying to do this directly, a growing body of evidence reveals that commercialization (as distinct from technology transfer) may require a separate entity. Locating the university's commercialization function at a research park offers the university access, but permits more down-stream application to be developed in a non-academic setting closer to industry.
- **Continuing need to break down cultural barriers between the academic and business communities and to facilitate true partnerships.** Facilitating industry-university partnerships is at the heart of a university research park development. While parks are devoting greater attention to nurturing such partnerships, efforts in this area remain more an art than a science. Parks must continue to serve as an intermediary that understands both cultures and innovatively foster integrated, collaborative efforts.
- **Achieving greater integration with the university.** The survey results indicated that university administrations and leadership have become more supportive and view research parks as a key element of the university's economic development efforts. Still, research parks must vie for resources, and many are viewed as separate from the university campus and its faculty. Research park directors must continue to integrate the research park and its tenants into the fabric of the university. Ways to accomplish this include allowing scientists and technical employees of park tenants to hold adjunct positions and giving park tenants access to the same privileges accorded faculty and students such as parking and transportation systems, exercise complexes, libraries and databases, and athletic and cultural events.
- **Identifying sources of support for both operations and buildings.** Most research parks have very few resources in their early stages and do not generate sufficient revenue to be self-supporting. The need for capital will become even greater as research parks try to implement live-work-play models. Greater involvement by the private sector is likely to be needed; but, additional support from public and university

sources also will be needed to provide the entrepreneurial and commercialization assistance required for parks to succeed as they seek to grow new companies.

- **Increased competition owing to globalization and the changing nature of corporate R&D.** Research parks are being built all over the world, and many of them are populated with operations of U.S. companies. Research parks in North America will be challenged to attract the operations of foreign companies and to retain the R&D operations of U.S. companies.

### Opportunities

The challenges noted above also suggest opportunities for research park development. Research park managers will need to devote more attention and time to the following 10 areas as they evolve the 21st century research park model:

1. **Industry-university partnerships.** Research parks will need to expand the relationships and deepen the partnerships between industry and educational and medical institutions. To accomplish this, parks could offer adjunct faculty status to tenants or increase access to core specialized equipment and labs. Parks may also want to develop formal affiliation agreements with their partnering higher-education institutions that spell out tenant services and support, means of access, and other issues of the relationship.
2. **Financing and support for commercializing intellectual property.** Research parks will need to offer funding and support for technology commercialization, including proof-of-concept funding. Universities have invested and improved their focus on technology transfer in the past decade. But, only a few have undertaken comprehensive efforts to commercialize technology, including providing support to develop prototypes, conducting engineering optimization analysis, and

supporting firm building. It is generally recognized that much of this work may be appropriately separated from a higher-education institution, federal laboratory, or medical center. Parks may offer a location for performing and operating technology commercialization; but, it must be recognized that external funding from various partners will be required to pay for this function. External financing is critical for most parks that want to play a greater role in commercialization.

3. **Retention and attraction of talent.** Figure 10 showed that access to a skilled workforce is a critical reason for tenants to locate in research parks. Many parks offer internships, co-ops, and other programs to place students and postdocs with companies. It is less common for universities to offer educational courses or workforce advanced training within the park. Just as research parks in the past decade offered space choices—incubator, accelerator, multitenant and single tenant—they may need to consider offering access to graduate, certificate, and short courses on-site. In the future, as the pace of technology makes skills obsolete in shorter and shorter time periods, research parks may also create formal workforce advanced-training facilities to meet companies' needs for technical talent. Partnerships with community colleges and technical institutes may address both technician talent and lifelong learning needs of park tenants and their employees.

Research parks can also become a locus for building a cadre of managers with experience in starting and growing technology companies. Parks may wish to consider having experienced CEOs serve as "entrepreneurs in residence" or interim CEOs able to advise start-up and emerging companies. Such individuals can also serve as technology scouts, looking for intellectual property with the potential for commercial development.

4. **Speculative and surge space development.** In the old economy, local economic development agencies offered "speculative" (spec) space, paid for from community and federal funding sources, to fast-track recruitment prospects. In the knowledge economy, firms come and go more quickly, space needs change constantly, and flexible space will increasingly become the norm. Parks may be able to offer the equivalent of 20th century spec space in a 21st century innovation model, through a staged program of expanded multitenant space. Designing park financial models to support the development of a certain amount of spec space would allow parks to offer their local communities flexible multitenant technology space, much as industrial parks offered manufacturing flex space in the past. Higher-education partners can, and increasingly will, help address the financial implications of such space by using it as surge space to handle industry- and government-sponsored research peaks and valleys.
5. **Collaboration among firms and with other partners.** While park managers did not rank this desire as high a priority as might be expected, it is likely that technology tenants want more opportunities to network among each other and with sources of knowledge in labs, research organizations, and elsewhere. Parks will, in partnership with trade and other associations, need to increase their focus on tenants' networking needs and requirements.
6. **Safety and security.** Research parks may have a role to play in offering safe, secure environments for technology development. The post-9/11 world suggests the need for controlled access to key strategic technology assets, whether in education or industry. Parks may be well positioned to test, demonstrate, and pilot approaches to address secure and safe environments for replication in the world economy.
7. **Ongoing financial support.** For research parks to be drivers of economic development, they must continue to invest scarce resources in their quality attributes. As a result, most parks will continue to have limited retained earnings. Parks need diversified funding sources, and investments in research parks need to be considered as investments in a region's or nation's economic development infrastructure. Just as their revenues are an inappropriate measure of the effectiveness of technology transfer offices (more appropriate measures would be volume of sponsored research or number of new companies created), similarly, research parks should not be expected to show the same profits as private real-estate development.
8. **Urban community revitalization.** Recently, a number of universities located in urban settings have begun to apply the research park concept not only to provide needed R&D space for academics and their industry collaborators, but also to stimulate the redevelopment of neighborhoods. This surge in urban research parks appears to stem, in part, from development of bioscience parks by medical centers. Because these urban parks are a fairly new phenomenon and in early stages of development, their success in revitalizing distressed neighborhoods remains to be seen. Research parks may have a role to play in cities seeking to grow their technology industry base.
9. **Performance and accountability.** Accountability in public and private sectors requires that research parks continue to monitor their impacts and results. This survey was an important first step in developing baseline data on the economic impact of university research parks. Working collaboratively through organizations such as AURP, research parks should continue to develop and refine a set of appropriate metrics and explore various mechanisms to measure their impacts and successes.

**10. Value-added tenant services.** Parks in recent years have substantially increased tenant services, particularly to small, growing technology firms. But, the nature and portfolio of services desired in the future are likely to change. Whether through boot camps, product development competitions, or other means, research parks—because they are off campus—can do the applications work that complements the research focus of the medical center, lab, or higher-education institution. Working with private-sector service providers, their incubator and accelerator programs, and technology transfer offices, parks may be a test bed for new ideas and approaches in

building technology-driven firms and their products and processes. Parks offer the environment for these activities, which likely will be performed and operated by other entities rather than by park management.

### **Summary**

Parks may offer locations where discovery is translated into application. The remarkably strong interest in entrepreneurship by park managers can be built upon by addressing park roles in areas such as collaboration, security, talent, and technology development. Parks can become places to develop talent; commercialize technology; and integrate government, higher-education, and industry interests.





## CONCLUSION

University research parks are not a new phenomenon. Some parks are mature, but new parks continue to emerge and much larger capacity is envisioned for the future. Research parks are important contributors to regional economies. Research park tenants employ 270,000 workers; of these, 264,000 are core employees and generate an additional 414,738 jobs in the economy, for a total employment impact of 679,151.

But, today's research parks differ from those of the past. Today's parks are creating an environment that fosters collaboration and innovation, leveraging the talent and expertise of universities to drive TBED. Today's research parks pursue a "grow-your-own" strategy by nurturing entrepreneurs and new and emerging companies and providing space for existing companies to expand. At the same time, they seek to attract research anchors and the research operations of major corporations.

Research parks are emerging as strong sources of entrepreneurship, talent, and economic competitiveness for regions, states, and nations. They have become a key element in the infrastructure supporting the growth of today's knowledge economy. By providing a location

in which researchers and companies operate in close proximity, research parks create an environment that encourages interaction and innovation and promotes technology development, transfer, and commercialization.

Research parks, however, also face challenges. They must find methods of more effectively moving research discoveries into the marketplace. They must find ways to break down barriers between the academic and business communities and more closely integrate the research park and its tenants into the fabric of the university. They need to identify sources of support for both operations and buildings and to adapt to globalization and the changing nature of corporate R&D.

Research parks have the potential to

- Translate discovery into application;
- Develop talent;
- Commercialize technology; and
- Integrate government, higher-education, and industry interests.

Achieving this potential, however, will require enlisting institutional leadership and community support, accessing sufficient capital for park development, and recognizing the long-term nature of this endeavor.





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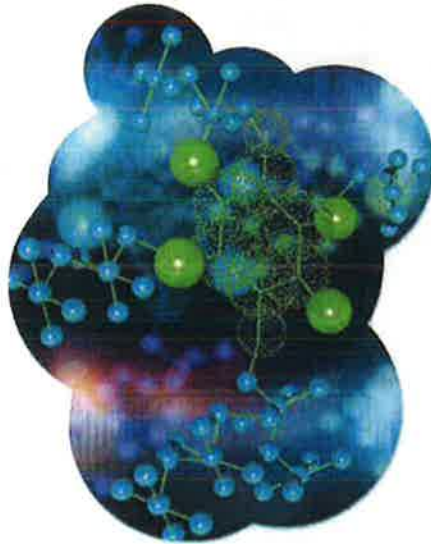
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## **Understanding Research, Science and Technology Parks: Global Best Practice: Report of a Symposium**

- Common elements characteristics of successful research parks or “best practices”.
- Five Factors Behind Successful Research Parks.
- Evaluating Research Parks.
- The Evaluation Challenge. Accountability is an especially important issue for universities, which, Dr. Link said “are not known to be good managers.”





DRIVING REGIONAL INNOVATION AND GROWTH



## Driving Regional Innovation and Growth: The 2012 Survey of North American University Research Parks

- The focus on innovation starts with the goals and objectives of nearly all research parks.
- Innovation activities result in measurable economic development successes.
- Six key attributes for success relating to innovation
- The leading impacts of the recession and weak economic recovery reported by survey respondents were 1. A lack of investment capital for buildings with more stringent underwriting criteria, 2. Higher vacancy in the local markets resulting in downward pressure on rental rates, 3. A reduction in government R&D funding, and 4. Less build to suit demand.
- Success Factors of University Research Parks.
- The Changing Face of University Research Parks: Trends in the Physical Development of University Research Parks.
- To attract Tenants, University Research Parks also have to get the Basics of Quality and Cost Right
- The Basics of Research Park Operations in 2012 – Size, Location, Governance.



# Driving Regional Innovation and Growth

The 2012 Survey of North American University Research Parks

Prepared for Association of University Research Parks (AURP)  
by Battelle Technology Partnership Practice

August 2013



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## **The Project Team**

**AURP** is a non-profit organization that promotes the development and operations of research parks that foster innovation, commercialization and economic competitiveness in a global economy through collaboration among universities, industry and government.

Every day, the people of **Battelle** apply science and technology to solving what matters most. At major technology centers and national laboratories around the world, Battelle conducts research and development, designs and manufactures products, and delivers critical services for government and commercial customers. Headquartered in Columbus, Ohio since its founding in 1929, Battelle serves the national security, health and life sciences, and energy and environmental industries. Battelle's Technology Partnership Practice (TPP) includes leading-edge practitioners and analysts who are experienced in conceptualizing and designing research parks built around universities and other research Institutions. For further information on Battelle's Technology Partnership Practice, please contact Mitch Horowitz, Vice President and Managing Director at horowitzm@battelle.org

**Insightrix Inc.**, established in June 2001, offers research-related services (such as online survey capabilities, traditional data collection, focus groups, personal interviews, strategic planning and management consulting) via the Internet, and helps clients develop, administer and manage data collection and information strategies to achieve their informational needs.

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In memoriam for Stephen Andrade, a good friend and highly respected colleague, whose efforts in shaping this report demonstrate his commitment and many years in advancing technology-based economic development.

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## INTRODUCTION AND KEY FINDINGS

As national and regional economies recover from the most severe global recession since the Great Depression of the 1930's, there is a growing emphasis on the importance of innovation for sustained economic growth and competitiveness in today's global, fast-paced, knowledge-based economy. Not only is innovation critical for industry development, it directly impacts the standard of living found in a nation and its regions. As the World Economic Forum explains in its highly touted *Global Competitiveness Report*:

*In the long run, standards of living can be expanded only with innovation...This requires an environment that is conducive to innovative activity, supported by both the public and the private sectors. In particular, this means sufficient investment in research and development especially by the private sector, the presence of high-quality scientific research institutions, extensive collaboration in research between universities and industry, and the protection of intellectual property.<sup>1</sup>*

University research parks provide a best practice means of focusing on innovation and sustaining economic competitiveness. According to the National Research Council in its study of research park best practices:

*Research parks are seen increasingly around the world as a means to create dynamic clusters that accelerate economic growth and international competitiveness. They are widely considered to be a proven tool to encourage the formation of innovative high technology companies. They are also seen as an effective means to generate employment and to make existing companies more competitive.<sup>2</sup>*

The reason why university research parks matter is that innovation in today's global economy is still a very local phenomenon. In an interesting paradox, the more globally integrated the world economy becomes, the more *local* research and development know-how, entrepreneurial culture, workforce skills and manufacturing competencies matter for economic success. A 2009 *Harvard Business Review* article by Harvard professors Gary Pisano and Willy Shih, entitled *Restoring American Competitiveness*, suggests that geographic proximity is in fact critical to the competitiveness of industries:

*...the evidence suggests that when it comes to knowledge, distance does matter...An engineer in Silicon Valley, for instance, is more likely to exchange ideas with other engineers in Silicon Valley than with engineers in Boston. When you think about it, this is not surprising, given that much technical knowledge, even in hard sciences, is highly tacit and therefore far more effectively transmitted face-to-face. Other studies show that the main way knowledge spreads from company to company is when people switch jobs. And even in America's relatively mobile society, it turns out that the vast majority of job hopping is local.<sup>3</sup>*

University research parks are viewed as creating the nexus in which industry clusters thrive. Christian Helmets from the London School of Economics finds that firms within the same industry benefit from being

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<sup>1</sup> World Economic Forum, *The Global Competitiveness Report 2010-2011*, page 8.

<sup>2</sup> National Research Council, *Understanding Research, Science and Technology Parks: Global Best Practices*, Washington D.C., 2009.

<sup>3</sup> Gary P. Pisano and Willy C. Shih, "Restoring American Competitiveness," *Harvard Business Review*, July 2009, page 3 of reprint.

co-located at a research park.<sup>4</sup> Pisano and Shih further explain this phenomenon as creating geographically based “industrial commons”:

*Once an industrial commons has taken root in a region, a powerful virtuous cycle feeds its growth. Experts flock there because that’s where the jobs and knowledge networks are. Firms do the same to tap the talent pool, stay abreast of advances and be near suppliers and potential partners.*<sup>5</sup>

## Report Roadmap

It is against this backdrop—of the importance of innovation and the role that university research parks can play—that this 2012 survey, commissioned by the Association of University Research Parks (AURP), was conducted.

The survey is intended to update the information on university research park activities considering a wide range of key topics involving their operation and success factors, as was done in similar surveys conducted in 2002, 2005 and 2007. Given the heightened global focus on innovation and economic competitiveness, the results of the 2012 AURP survey of North American university research parks are organized in this report to focus specifically on the value that research parks contribute to advancing regional innovation systems and regional economic development.

In this section, the parameters of the survey and the distinguishing attributes of university research parks are discussed, along with the key findings.

The second section of the report, entitled ***The Contribution of University Research Parks to Regional Innovation Ecosystems***, discusses how all of the various elements of an innovation ecosystem—including advancing innovation through commercialization of university-based technologies, advancing industry product development and supporting emerging technology companies—are incorporated into university research park goals, activities, real estate development and ultimate success.

The third section of the report, entitled ***The Contribution of University Research Parks as Regional Economic Drivers***, examines the trends and broader implications of the economic impact of university research parks, including a discussion of the range of industries served and the resulting economic activity and job creation.

The fourth section of the report, entitled ***The Changing Face of Development Across University Research Parks***, considers issues related to the physical development of university research parks.

The final section of the report, entitled ***The Basic Details of Research Park Characteristics: 2012***, provides an examination of a broad array of park characteristics for those seeking more in-depth knowledge of structure, governance, budget and other characteristics of university research parks.

## More about the 2012 AURP Survey

A web-based, 38-question survey of university research parks in North America was conducted covering the activities of university research parks in 2012. The survey requested data on park characteristics, input on trends in university research park development and data to measure the economic impact of park development. The survey was sent to 174 university research parks in the United States and Canada; 108 parks (62 percent overall) responded to the full survey, while an additional 30 parks (17 percent) replied only to questions on park employment. Of the 108 full survey responses received, 84 percent of the

<sup>4</sup> Christian Helmers, “What Makes Science Parks Successful,” *University World News*, May 8, 2011, Issue 170

<sup>5</sup> Gary P. Pisano and Willy C. Shih, “Restoring American Competitiveness,” *Harvard Business Review*, July 2009, page 3 of reprint.



respondents were in the United States, with the remainder in Canada. Survey services were provided by Inshtrix Research Services.

The 62 percent response rate to this 2012 survey is excellent, and well above the norm for surveys of this type. However, it must be noted that the survey results represent a snapshot in time and are not always directly comparable to the past surveys of 2002, 2005 and 2007 in absolute values of employment and build-out of research parks. This is due to the differences in park characteristics, particularly size, of the university research parks that responded in different years to the survey. Where possible, trends are reported based on data from research parks that responded across multiple survey years.

**Figure 1: 2012 Survey Response Distribution – 108 University Research Parks Responding to Full Survey**



## Key Findings

The 2012 survey of North American university research parks brings up-to-date the state of university research park activities considering a wide range of key topics about how university research parks operate and what matters in driving success. Given the heightened global focus on innovation and economic competitiveness, the results of the 2012 AURP survey of North American university research parks are organized to focus specifically on the value that research parks contribute to advancing regional innovation systems and regional economic development.

The results from the 2012 survey of North American university research parks demonstrate the extent to which university research parks are focused on advancing innovation in regions across North America.

- The focus on innovation starts with the goals and objectives of nearly all university research parks, with the top rated priority being "The creation of an environment that encourages innovation and entrepreneurship". ✓
- Innovation services are offered by nearly all university research parks responding to the survey, with nearly all providing either university-industry collaboration services or access to commercialization services, and many providing multiple types of innovation services.
- Innovation activities result in measurable economic development successes, particularly through the incubation of emerging technology companies. The 108 university research parks responding to the survey report that 963 new businesses have graduated from their incubators or related

startup space in the last five years. Of these graduate startup companies, 26 percent remained in the park, 43 percent left the park but remained in the region and just 12 percent left the region. Significantly, only 19 percent of these startup companies were no longer in business, considerably outperforming overall national statistics on startup companies, where over 50 percent fail within five years.<sup>6</sup>

The focus on innovation is viewed as critical to the success of university research parks. Six key attributes for success relating to innovation were rated by university park directors as being of High or Very High importance to the success of a park. These six key attributes were:

- Good match between the core competency of the affiliated university and the recruited tenants
- Capacity to assist early-stage business organizations in commercialization
- Access to equity capital sources for research park tenants
- Priority availability of multi-tenant space for incubator graduates
- Priority access to university resources, facilities, faculty and students
- Availability of a formal business incubator in the research park boundaries

University research parks are becoming even more integrated into regional innovation efforts and are often signature developments for creating the dynamic live-work-play environments that attract high-skilled, technology professionals to a region.

- The seeds of these live-work-play developments were found in many of the new university research parks brought on line over the last decade, such as Centennial Campus (affiliated with North Carolina State University), Mission Bay (affiliated with the University of California San Francisco) and the Fitzsimmons Life Science District in Colorado (affiliated with the University of Colorado's academic medical center).
- The 2012 survey finds that even established university research parks are transforming themselves from primarily commercial real estate environments into thriving live-work-play environments. For example, while today only 7 percent of university research parks offer non-student housing, 21 percent of parks are planning such developments within the next five years. Non-food/restaurant retail is also on the rise, with projected growth within the next five years from just 12 percent of existing university research parks currently offering such services, to 30 percent based on university research parks' plans to offer such facilities. Putting this all together, within five years, the share of university research parks offering live-work-play environments will rise from 6 percent to 21 percent.

The focus on innovation is enabling university research parks to demonstrate continued strong growth despite the severe economic recession and weak economic recovery since 2007.

- Thirteen percent of the 108 university research parks responding to the 2012 survey were formed since 2008. These 14 new university research parks have a current build-out of 3.2 million square feet and directly support 3,526 jobs.
- Just as encouraging is the fact that 80 of the 108 university research parks surveyed (74 percent) have opened a new building since 2008.

<sup>6</sup> Scott Shane, "Start Up Survival Rates: The Definitive Numbers," Small Business Trends, December 17, 2012, see <http://smallbiztrends.com/2012/12/start-up-failure-rates-the-definitive-numbers.html>

- Of the 85 university research parks that responded to the employment portion of the survey in both 2007 and 2012, 64 percent gained employment from 2007 to 2012. In total, the 85 university research parks experienced an average employment gain of 27 percent over those five years—a significantly better performance than the economy as a whole, which due to the global recession and weak recovery suffered a 4.5 percent loss of employment during the same period.

Total university research park employment reported for the 2012 survey of North American university research parks reached 379,754 jobs. (Note that this is only for the parks that responded—the 108 parks with a full survey response and an additional 30 parks that responded only to the employment portion of the survey. These 138 parks make up 79 percent of the parks that received the survey.)

A high level analysis was undertaken to quantify the ripple effect of these jobs. This sophisticated employment impact analysis measured the additional economic activities—including jobs, taxes/other public revenues and spending from the salaries of university research park employees—in the larger economy. Based on this analysis, the 379,754 jobs reported from the survey responses are estimated to support an additional 561,504 jobs throughout the U.S. and Canadian economies. Thus the total employment impact of university research parks responding to the survey amounts to 941,258 jobs in 2012.

Still, university research parks were not immune to the impacts of the recent recession and weak economic recovery. Two out of three university research park directors indicated that the recession had a significant negative impact on the growth and development of their parks. The leading impacts of the recession and weak economic recovery reported by survey respondents were a lack of investment capital ✓ for buildings with more stringent underwriting criteria, higher vacancy in the local markets resulting in ✓ downward pressure on rental rates, a reduction in government R&D funding and less build-to-suit demand. ✓

Altogether, the results from the 2012 North American University Research Park Survey point to a robust and growing innovation and business creation model. Since the last survey in 2007, the university research parks sector has shown growth on multiple measures, including the development of new parks, the physical expansion of existing parks, increased employment and new business spin-outs. The results of the survey also highlight the increasing relevance of university research parks within regional innovation ecosystems. The survey points to a future in which many university research parks will be transformed into broader districts encompassing the vibrant signature live-work-play developments critical for driving technology-based economic development within regions. While the university research parks in the 2012 survey have shown outstanding positive growth over the preceding 5 years, they are nonetheless clearly impacted by overall economic conditions. Efforts to improve availability of capital and ✓ raise government funding for R&D are important drivers for the successful future of North American research parks.



## What is a University Research Park

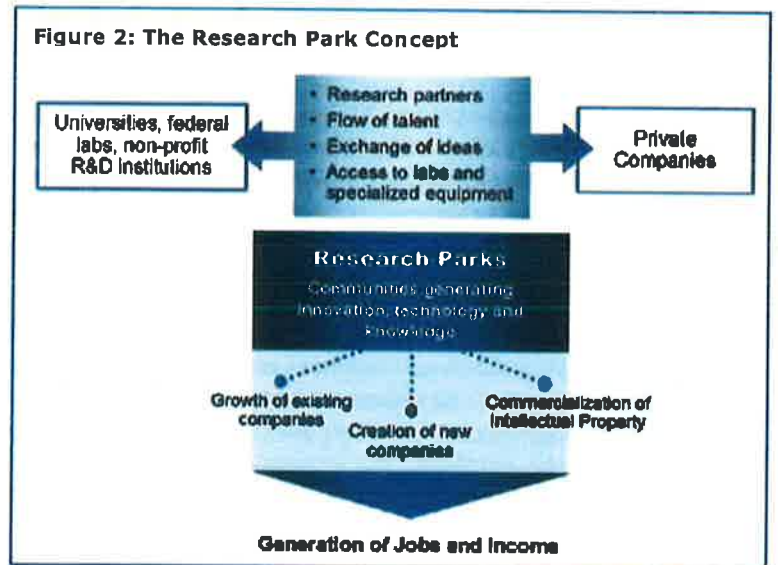
University research parks are physical environments that can generate, attract and retain technology companies and talent in alignment with sponsoring research institutions (universities and public and private research laboratories). As presented in Figure 2, research parks enable the flow of ideas between technology generators (universities, federal labs, and non-profit R&D institutions) and technology companies located in both the research park and the surrounding region. Ideally, the innovations, technologies, and knowledge generated by, and the interactions between, a park's companies and research institutions support the creation of startup companies, the retention and expansion of existing firms and the attraction of new firms into the region.

University research parks differ from other science or technology parks in that they are generally developed by, or in collaboration with, a leading research institution. Most research parks are affiliated with one or more universities; however, research parks have also been affiliated with, and located close to, national laboratories or other sources of technology and innovation. The term "university research park" encompasses all of these situations.

*AURP defines a university research park as a property-based venture which has the following attributes:*

- A property master plan designed for research and commercialization
- Partnerships with at least one university or other research institution
- Encouragement of the establishment and growth of new companies
- Technology translation from the lab to the marketplace
- A focus on technology-led economic development

The key factor differentiating a university research park from a technology or industry park is the meaningful interaction between the companies in the park and the affiliated research institution(s). This interaction can include providing internship and employment opportunities for students, sharing facilities and equipment or conducting collaborative research. In addition, most university research parks have a university presence within the park, which can include research labs, test beds, education and training facilities and technology transfer offices. Research park tenants undertake R&D within their premises in the park, employ high concentrations of scientific, technical and professional workers and generate products or processes that are based on scientific or technological discoveries. While the development community tends to classify many technology and industry parks as research parks, they usually do not meet the above criteria.







## THE CONTRIBUTION OF UNIVERSITY RESEARCH PARKS TO REGIONAL INNOVATION ECOSYSTEMS

While university research parks do involve the development of a physical setting proximate to a research driver and thus involve commercial real estate activities, it is commercial real estate with a purpose. And that purpose—clearly revealed by the 2012 Survey of University Research Parks—is to advance regional innovation ecosystems.

### Importance of Regional Innovation Ecosystems

A regional innovation ecosystem in today's global, knowledge-based economy is the means by which a region can ensure its economic competitiveness, and is directly tied to quality job creation and a high standard of living. The 2010 update to *Rising Above The Gathering Storm*—a highly influential report from the National Academies of Sciences set out by a blue ribbon panel of leading industry and academic leaders—explains:

*...the fundamental measure of [regional] competitiveness is quality jobs. It is jobs that to a considerable degree define the quality of life of a nation's individual citizens...Substantial evidence continues to indicate that over the long term the great majority of newly created jobs are the indirect or direct result of advancements in science and technology, thus making these and related disciplines assume what might be described as disproportionate importance.<sup>7</sup>*

Across North America, regions are working hard to safeguard their economic futures in light of the competitive demands of today's economy. There is a growing recognition that the factors that drive economic development are rapidly shifting. In the past, a region's natural resources and proximity to markets were the critical factors for economic development. But with the rising importance of innovation and technology development, a region's economic competitiveness increasingly depends on its ability to establish a high quality system that fosters innovation and promotes the development, transfer and commercialization of technology. Such innovation ecosystems provide environments in which emerging technology companies can be incubated and grow, researchers and companies can collaborate and access to scientific, engineering and entrepreneurial talent can be easily facilitated.

Technology-based development has emerged as the key difference in a region's economic performance. A study by the Milken Institute, a private, non-profit research organization, in evaluating the economic growth across 315 regions in the U.S. over the 1975 to 1998 period, found that 65 percent of the difference in economic success for regions is accounted for by the growth and presence of high technology industries. Moreover, the Milken Institute identified that research centers and institutes are "indisputably the most important factors in incubating high tech industries."

And the Milken Institute is not alone in noting that fast-growing technology-oriented economies are typically anchored by major research universities interacting with a robust technology-oriented private sector. A study prepared for the U.S. Small Business Administration (SBA) found that "Research universities and investment in research universities are major factors contributing to economic growth in the labor market areas in which the universities are situated." Studies by the Office of Technology Policy and others have found that all areas of technology-based economic development in the U.S. have strong concentrations of both university and private research.

Notes: Milken Institute, *America's High-Tech Economy: Growth, Development and Risks for Metropolitan Areas*, 1999; Bruce Kirchoff, "The Influence of R&D Expenditures on New Firm Formation and Economic Growth," Maplewood, N.J. BJK Associates, 2002; U.S. Department of Commerce, Office of Technology Policy, *The Dynamics of Technology-based Economic Development: State Science and Technology Indicators*, Washington, D.C., 2000.

<sup>7</sup> National Academy of Sciences, *Rising Above the Gathering Storm, Revisited: Rapidly Approaching Category 5*, September 2010, page 17-18

## The 2012 University Research Park Survey Results

The 2012 University Research Park Survey results demonstrate the extent to which university research parks are focused on advancing innovation in their regions. The focus on innovation starts with the goals and objectives of university research parks, is found in their services, is critical to their success and is demonstrated in measurable economic development results. This effort by university research parks to be a place for advancing regional innovation systems is multi-dimensional and recognizes the many different factors which can foster innovation and technology commercialization, from incubation of emerging technology companies to industry-university partnerships to accessing top talent.

### University Research Park Goals and Objectives Focused on Advancing Innovation

University research park directors identified the establishment of an innovation system as a priority goal and objective of their parks.

- **The top ranked priority was "Create an environment that encourages innovation and entrepreneurship,"** ranked as a Very High or High priority on 97 percent of the responses. Its average rating was nearly a perfect 5.
- The second highest ranked priority was **"Offer a place for faculty and students to work with industry,"** ranked as a Very High or High Priority by 83 percent, with an average rating of 4.27.

What also stands out is what was rated low as a goal or objective of university research parks. The lowest ranked goal was "Generate income for university and developer," with only 40 percent ranking it as a Very High or High priority. Also ranked low was "Promote development/redevelopment in the neighborhood around the university," with only 50 percent ranking it as a Very High or High priority. This points out that while university research parks are by their nature real estate developments, the profitability and expansion of real estate holdings is a minor consideration compared to the focus on leveraging the real estate for broader innovation and economic development goals for their region. This is in stark contrast to most real estate developments.

**Table 1: Research Park Goals and Objectives**

Park Objectives	Average Rating (Scale of 1-5 with 5 being Very High Priority)
<b>Create an environment that encourages innovation and entrepreneurship</b>	<b>4.72</b>
<b>Offer a place for faculty and students to work with industry</b>	<b>4.27</b>
<b>Serve as a landing pad for recruitment of industry (both national and international) to region</b>	<b>4.21</b>
<b>Serve as a location for existing businesses to grow and expand in region</b>	<b>4.10</b>
<b>Encourage commercialization of university Intellectual Property</b>	<b>4.09</b>
<b>Build university stature</b>	<b>3.83</b>
<b>Promote development/redevelopment in the neighborhood around the university</b>	<b>3.22</b>
<b>Generate income for university and developer</b>	<b>3.16</b>

## University Research Park Services Bring Focused Attention to Innovation

University research parks offer a wide range of services to their tenants related to advancing innovation, particularly through the business, commercialization and industry-university collaboration services offered.

Ninety-eight percent of the responding research parks provide access to some university-industry collaboration services, 88 percent provide access to some business and commercialization services and most provide access to multiple innovation services. Of particular prevalence is the number of services provided by university research parks that are focused on helping their industrial tenants connect to the resources they need, whether they be financial, technological, commercial or talent related resources.

For the promotion of university-industry collaboration, the most common services offered were having park staff responsible for relationship building between industry and universities and offering industry tenants access to university research labs.

**Table 2: Industry-University Collaboration Services Offered**

Partnering Mechanism	Percentage of Parks
Partnership-developer staff or others charged with "relationship building" between industry and universities	64%
Access to university research laboratories	63%
Human resources matching: internship or co-op programs, mechanisms for student and post docs hiring	59%
University tech transfer/commercialization office	54%
University core user facilities (e.g., analytical lab, prototyping lab), open to industry	49%
University educational course offerings to industry tenants	44%
Pilot plants or demonstration labs, open to industry	33%
Workforce advanced-technology training facilities	27%

Across individual business and commercialization services, the most common services offered include helping industry tenants access state and local programs for business and commercialization and linking to or directly providing sources of capital.

**Table 3: Business and Commercialization Services Offered**

Service Offerings	Percentage of Total Parks
Help access state and other public programs	81%
Link to or provide sources of capital	72%
Assist with business planning	64%
Advise on marketing and sales strategy	61%
Provide access to subsidized space	57%
Perform technology and market assessments	56%
Assist with human resource issues	44%
Provide proof-of-concept funding	36%

## Success Factors of University Research Parks Point to Importance of Advancing Innovation

The university research park directors in the 2012 Survey were asked to consider the key attributes needed for the success of a university research park. The results point to the importance of innovation-related activities, in particular.

Six key attributes for success relating to innovation were rated by the vast majority of university research park directors as being of Very High or High importance to the success of a park. These attributes, along with their average ratings, are as follows:

- Good match between the core competency of the affiliated university and the recruited tenants – 4.31 out of a top score of 5.
- Capacity to assist early-stage business organizations in commercialization – 4.19
- ✓ rental prices ✓ • Access to equity capital sources for research park tenants – 4.07
- Priority availability of multi-tenant space for incubator graduates – 4.06
- Priority access to university resources, facilities, faculty and students – 4.04
- Availability of a formal business incubator in the research park boundaries – 4.00

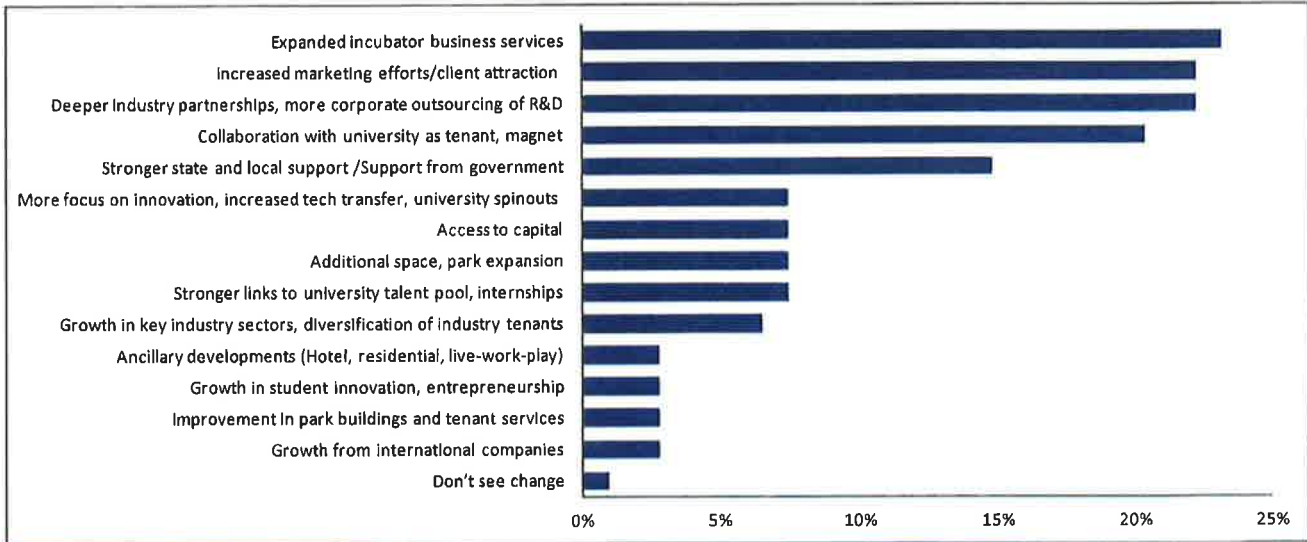
It was also recognized by research park directors that it takes more than innovation-related attributes to advance the success of research parks. Of particular importance is the connectivity of the park with ✓ university leadership and with the economic development community. In fact, the two mostly highly rated attributes for success of a university research park fell into this category. They were:

- Commitment of university leadership – 4.56
- Acceptance by the local economic development community – 4.50

Looking to the future, the university research park directors responding to the survey noted key opportunities for enhancing the growth, effectiveness and impact of research parks in the next five to ten years. Figure 3 shows the opportunities that were most frequently mentioned in the survey, and the number of park directors that identified each opportunity as key. Innovation-related activities clearly stand out as critical to the future of growing university research parks, with park directors noting, among the top rated opportunities, the following:

- Developing and expanding the business services offered by Incubators
- Capitalizing on more corporate outsourcing of research and deepening university-industry research partnerships
- Strengthening collaboration between the park and its affiliated universities.

**Figure 3: Key Opportunities for Enhancing the Growth, Effectiveness and Impact of Research Parks in the Next Five to Ten Years (by percentage of responses)**



### Measurable Economic Development Results for University Research Parks in Advancing Innovation

As a result of their targeted focus on building innovation ecosystems and on providing the services that such systems require, university research parks have a demonstrated record of economic development success that stem from their innovation activities, particularly through the incubation of emerging technology companies. This success not only fuels the growth of research parks, but has positive spill-over effects for the regions served as these emerging technology companies graduate from the university research park and, frequently, set up shop in the surrounding community.

Park directors from the 108 responding university research parks reported that 963 businesses have graduated from their incubators or related startup space in the last five years. Of these graduate startup companies 26 percent remained in the park (with 24 percent having moved to multi-tenant space and 2 percent having moved into their own buildings). An additional 43 percent of graduate startup companies left the park but remained in the region (with 30 percent locating in close proximity to the park). Just 12 percent of the graduate startup companies left the region. Significantly, only 19 percent of the graduate startup companies were no longer in business, considerably outperforming overall national statistics on startup companies, where over 50 percent fail within five years.<sup>8</sup> Apart from the extraordinarily high success rate of startups that are incubated in a university research park, it is also important to note that of those startups that succeed, a full 77 percent remain in the region surrounding the park where they were incubated, further contributing to the region's attractiveness as a center of innovation.

<sup>8</sup> Scott Shane, "Start Up Survival Rates: The Definitive Numbers," Small Business Trends, December 17, 2012, see <http://smallbiztrends.com/2012/12/start-up-failure-rates-the-definitive-numbers.html>



**Table 4: Startup Companies Incubated Through University Research Parks**

Status of Startup After Graduation from Incubator	Percentage of Total
Moved to multi-tenant space within park	24%
Moved to own building in park	2%
Left the park but remained in the region	43%
Left the region	12%
No longer in business	19%
Other	1%
<b>TOTAL</b>	<b>100%</b>

In summary, the 2012 University Research Park Survey results reveal the encompassing focus of university research parks in advancing regional innovation systems. It is clearly the mission of university research parks to play a value-added role in advancing the innovation ecosystem in their region. As discussed above, it is found across university research parks goals and objectives, services, key success factors and economic development results.

But supporting innovation is just a means towards broader economic development for regions in terms of jobs and growing economic activity. The next section considers how university research parks are performing in terms of helping to drive increased economic activity in their regions.

#### **An Urban Driver of Regional Innovation: University City Science Center**



Since its founding as the first urban-based research park, the University City Science Center has been a critical foundation for technology-based economic development and technology commercialization in the Greater Philadelphia region. Its efforts in advancing innovation are multi-faceted. Its highly regarded Port business incubator offers far more than just high quality lab space, offering connections to capital, access to networking, marketing and grant writing support and proximity to researchers. In recent years, the Port business incubator has successfully

targeted emerging international technology companies to come to the Greater Philadelphia region as a way to entering the U.S. market. It also recently opened a co-working space, known as the Bullpen, focused on small startup companies requiring a desk, phone, high speed Wi-Fi and the camaraderie of other entrepreneurs motivated about growing their companies. Still, the focus on entrepreneurial connections goes well beyond incubator companies. Through its Quorum programs, the University City Science Center offers a wide range of programming and networking activities to connect entrepreneurs to investors and advice, from monthly sessions that bring an investor to talk with a small group of entrepreneurs, to one-on-one sessions with business experts. Quorum is building and sustaining the high value, high touch environment needed for innovation to flourish. Beyond these services, the University City Science Center is directly involved in technology commercialization. Through its QED Program, it offers a multi-institutional proof-of-concept fund to support academic researchers developing early-stage life science and digital health technologies with high commercial potential. Investing alongside research institutions in a 12 month milestone-driven approach, the University City Science Center also taps the expertise of the technology domain experts and serial entrepreneurs to evaluate the prospects and provide critical business advice to advancing the commercialization of these university-based technologies. More than 16 awards have been made since 2009.

**Helping to Root Innovation within a University Research Community:  
University Research Park at UW-Madison**

One of the nation's most successful university research parks is found in Madison, Wisconsin. Today it encompasses 37 buildings totaling 1.8 million gross square feet, housing 125+ companies with nearly 4,000 employees. A cornerstone of its success is its ability to create a high quality environment for start-up companies. Early in its existence, the University Research Park benefitted from having the Madison Gas & Electric Company fund the creation of a 113,000 sq ft Innovation Center, which has helped more than 70 early stage companies grow since 1989. Today, the University Research Park is an integrated component of the university's overall innovation and commercialization approaches. It is a destination of choice for spinoffs from the Wisconsin Alumni Research Foundation (WARF)—the patent and licensing agent for discoveries made by UW faculty—and houses the university's Office of Corporate Relations, which is actively involved in connecting emerging companies to the University Research Park and cooperating with pre-commercialization research. Two new projects that recently were started include an 80,000 sq ft Accelerator Facility for second stage space for growing incubator companies in University Research Park and a new downtown Madison Metro Innovation Center.





## THE CONTRIBUTION OF UNIVERSITY RESEARCH PARKS AS REGIONAL ECONOMIC DRIVERS

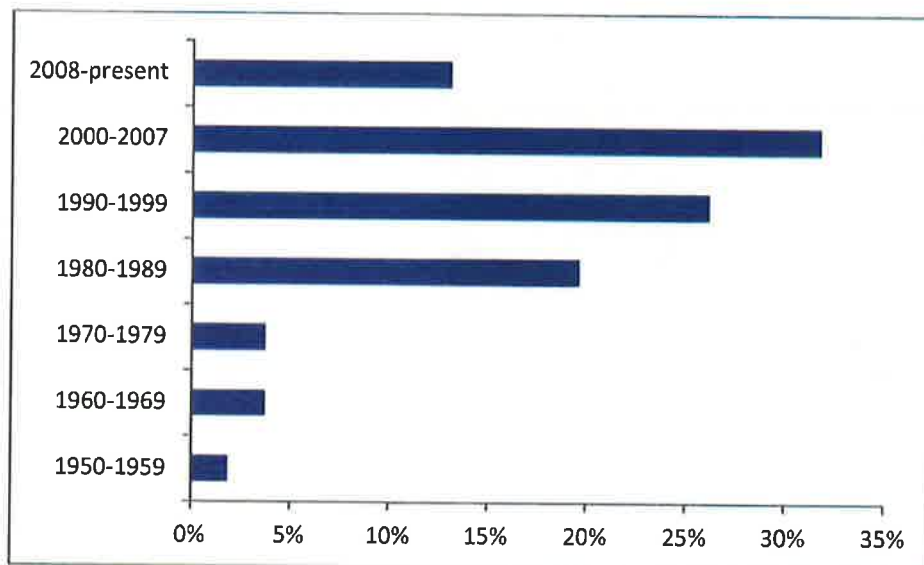
University research parks primarily affect the direct economic activity of their communities by offering a high quality location for existing businesses wanting to locate in their region as well as for new and emerging technology companies looking to take root and expand. The impact of the direct economic activity of university research parks can best be measured by the number of jobs located in their facilities. The survey results below provide insights into recent trends in research park activity since the onset of the 2007 recession, the range of tenants and the economic impact of the university research parks across North America for 2012.

### Recent Trends Demonstrate the Continued Growth of University Research Parks, and Prospects for the Future Are Strong

University research park development has continued despite the severe economic recession and weak economic recovery found across North America.

- Thirteen percent of the 108 university research parks responding to the 2012 survey were formed since 2008 (see Figure 4). These 14 new university research parks have a current build-out of 3.2 million square feet and have attracted 3,526 jobs.

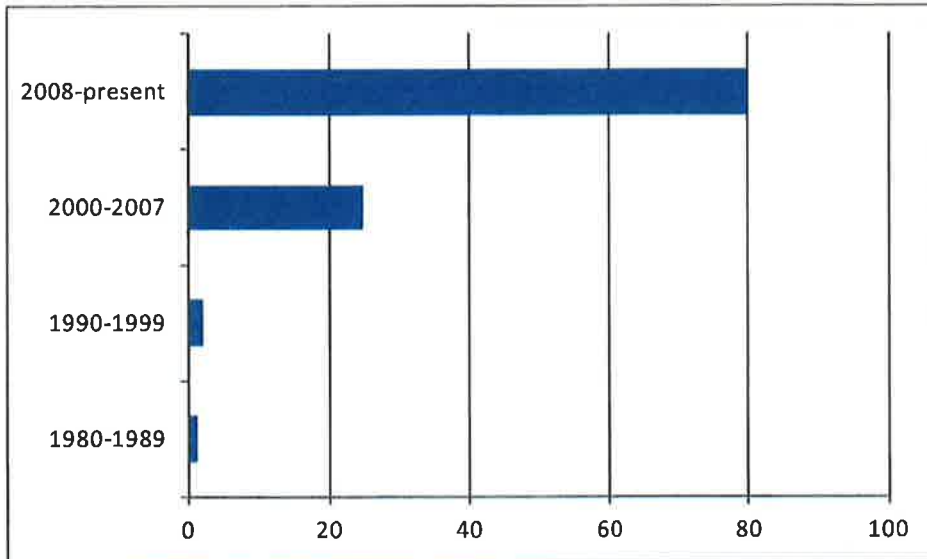
**Figure 4: Year Research Park Established**



- Just as encouraging is the fact that 80 of the 108 university research parks surveyed (74 percent), have opened a new building since 2008 (see Figure 5).



**Figure 5: Year Most Recent Building Completed**

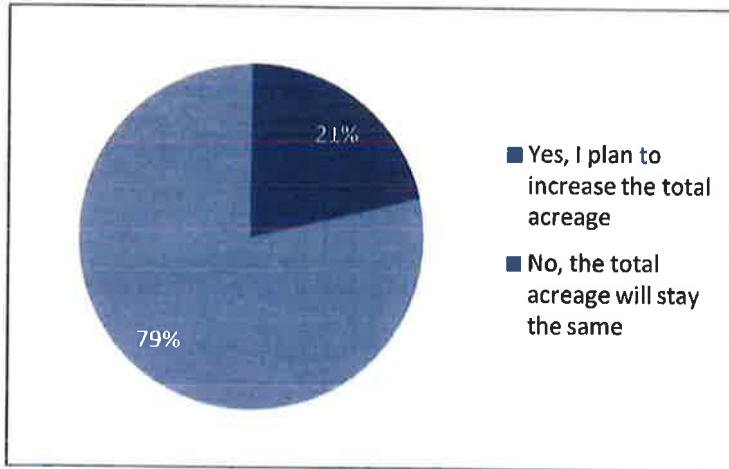


While it is difficult to assess overall employment change given the differences in the population of responders to the survey from 2007 to 2012, an apples to apples comparison of those university research parks that responded in both years shows that many university research parks did in fact grow in total employment during that time period.

- There were 85 university research parks that reported employment in both 2007 and 2012. Of these 85 university research parks, 54 (64 percent) gained employment from 2007 to 2012. In total, the 85 university research parks experienced an average employment gain of 27 percent over those five years—a significantly better performance than the economy as a whole, which due to the global recession and weak recovery suffered a 4.5 percent loss of employment during the same period.

Looking to the future, although research parks are typically designed to accommodate significant growth on the original property, roughly one in five of the university research parks surveyed expect to max out their existing properties and plan on increasing the area of their parks within the next 5 years

**Figure 6: University Research Parks Expecting to Increase Their Acreage in Next Five Years**



### **Still University Research Parks Are Not Immune to the Impacts of Recent Recession and Weak Economic Recovery**

The recession and weak economic recovery since 2007 have had an impact on the growth of university research parks.

- ✓ • Two out of three university research park directors indicated that the recession had a significant negative impact on the growth and development of their university research parks.
- The leading impacts of the recession and weak economic recovery were:
  - Lack of investment capital for buildings and more stringent underwriting criteria, which significantly impacted 33 of the 108 (31 percent) university research parks responding.
  - ✓ ○ Higher vacancy in the local markets resulting in downward pressure on rental rates, which significantly impacted 27 percent of the parks responding.
  - ✓ ○ Reduction in government R&D funding, which significantly impacted 22 percent of the parks responding.
  - Less build-to-suit demand, which significantly impacted 22 percent of the parks responding.

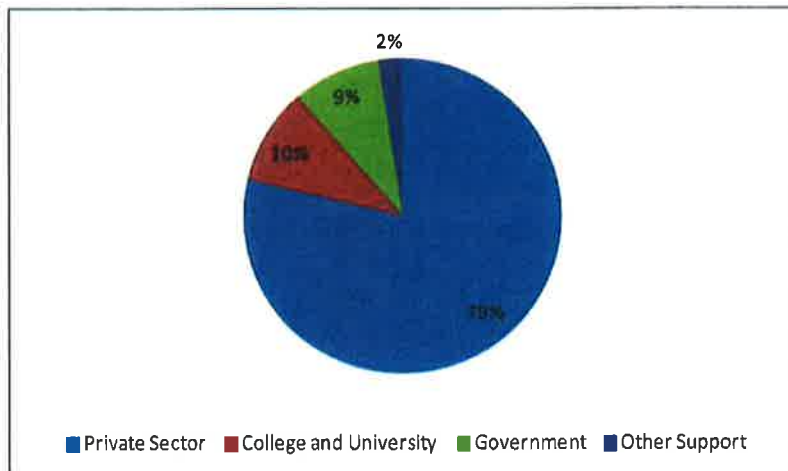
This suggests that university research parks, while still on a positive growth trajectory, are clearly impacted by overall economic conditions. Efforts to improve availability of capital and raise government funding for R&D are important drivers for their future success. ✓

## **In 2012, University Research Parks Are Home to a Significant Level of Technology Industry Jobs Primarily Focused on Conducting Research and Development**

137 university research parks reported total employment of 379,754 in 2012. Eight of the responding university research parks reported employment of 10,000 or more, with these eight parks accounting for 53 percent of total reported employment. The average number of employees per park is 2,752 while the median number of employees is 850, signifying that a few parks account for a large share of total employment.

Based on detailed industry employment breakouts from roughly 20 percent of those responding to the survey, a broad base of employment is found across university research parks. Of those responding with detailed industry employment breakouts, 79 percent of research park personnel are employed in the private sector technology related sector—representing 301,126 jobs. An additional 10 percent are employees of colleges and universities (both public and private institutions), 9 percent are employed by government agencies and the remaining 2 percent are employed in businesses supporting other park tenants, such as retail stores, restaurants, daycare centers, banks, health clubs and other on-site support services and amenities (see Figure 7).

**Figure 7: Composition of North American Research Park Employment by Sector**



Within the private sector technology industries, employment at university research parks is dominated by three sectors as reported by those completing this portion of the survey: Software and Internet Services; Aerospace and Defense; and Biosciences, which together account for 48 percent of total university research park employment.

Given the importance of university research parks as drivers of innovation, one would expect that most of the employment is focused on research and development activities, and the results of the 2012 survey confirm this. Overall, almost 62 percent of all university research park jobs, and 78 percent of total private sector technology-related jobs, found in the responding university research parks are reported to be involved with R&D activities.

**Table 5: Research Park Employment by Detailed Industry as Reported in the 2012 Survey Responses**

Industry	Percentage of Total Park Employment	Within Each Specific Industry, the R&D Employment as a % of Industry Employment
Total Park Employment	100%	62%
Private Sector – Technology Related	79%	78%
Software and Internet Services	19%	81%
Aerospace/Defense	15%	95%
Bioscience	14%	70%
Scientific and Engineering Services	9%	85%
Electronics	6%	98%
Business Support Services	6%	49%
Environmental Consulting	3%	97%
Other	2%	17%
Management and Business Consulting	2%	16%
Advanced Materials	2%	55%
Digital Media	1%	85%
Alternative Energy	0.3%	81%
Colleges and Universities	10%	n/a
Government	9%	n/a
Park Support (Retail, Personal Services, etc)	2%	n/a

Note: 20% of the 108 survey responses completed this detailed listing of tenant employment by industry

### **The Economic Impact of University Research Parks is Significant**

Employment in university research parks has regional economic benefits that extend far beyond a particular job or one individual's salary. The private sector research and technology-based tenants located in university research parks have interdependent relationships with suppliers of other goods and services in the larger regional and state economies in which they are located. In other words, companies in research parks both depend on and support other companies in the regional, state and national economies as they purchase goods and services from other companies and pay salaries and wages to their employees, who then go on to make purchases of goods and services from other companies. These cycles of income and purchases are called "ripple" or "multiplier" effects. As a result of these effects, a research park has an economic impact much greater than the number of the total jobs located in the park, as do virtually all business locations that use goods and employ people.

Based on an economic impact analysis undertaken by Battelle,<sup>9</sup> the 379,754 jobs reported from survey responses of university research parks is estimated to support an additional 561,504 jobs throughout the

<sup>9</sup> In order to analyze the economic importance of university research parks, this report includes a high level analysis of the employment impacts of university research parks on the U.S. and Canadian economies. To measure the employment impact of U.S. and Canadian university research parks, a set of industry-specific multipliers were used. Multipliers quantify the ripple effect discussed here where one industry or group of industries supports or creates additional economic activities including jobs, taxes and other public revenues, and spending from the salaries of

U.S. and Canadian economies—so the total employment impact of university research parks responding to the survey amounts to 941,258 jobs. Keeping in mind that the respondents represented only 79 percent of the qualifying university research parks in North America, the true employment impact of university research parks is well over one million jobs. This analysis yields a total employment multiplier of 2.48.

Demonstrating the economic impact of research parks has become an increasingly important issue—and fully half of all of the responding parks reported that they have completed an economic impact analysis apart from this survey. Some examples of the results of such studies are as follows:

- The University Science Center in Philadelphia, the first major urban research park in the nation, estimated that the economic impact of the business that have been generated or assisted by the park have directly created 15,686 jobs, and when multiplier effects are included created a total of 42,021 jobs and almost \$9.4 billion in economic activity.<sup>10</sup>
- A study of the University of Arizona Science and Technology Park found that the 6,494 jobs in the park supported a total of 14,332 jobs in Pima County, AZ and generated \$2.7 billion in economic activity.<sup>11</sup>
- The Purdue Research Park network of four locations directly employ 3,771 full-time equivalent workers, and when multiplier effects are included, support 9,632 jobs and over \$1 billion in economic activity.<sup>12</sup>

### **Formal Economic Impact Analysis Is Just One Measure of University Research Park Broader Impacts on Their Local Economies**

The university research parks that have conducted economic impact analyses measured their impacts using a wide variety of measures. Most analyzed the economic contribution of the tenants located in the parks. Many assessed the role of the park in catalyzing the development or new technologies and businesses. Some, like a 2006 study of Research Triangle Park,<sup>13</sup> assessed the role of the research park in developing and changing the regional economy.

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industry workers in the larger economy. For U.S. parks, the Battelle Team utilized state-specific industry multipliers developed by the Bureau of Economic Analysis (BEA). The employment impacts of Canadian research parks were similarly analyzed using national level direct effect employment multipliers produced by Statistics Canada. The direct-effect employment multipliers from BEA and Statistics Canada were then used to tabulate the unique state/Canada and industry impact multipliers for each major industry of research park tenants. The multipliers represent the total change in number of jobs in all industries (direct, indirect, and induced effects) that result from a change of one job in the corresponding industry sector.

To calculate the total employment impacts of each industry, direct employment was multiplied by an industry-specific multiplier. It was first necessary to determine whether a given firm's activities were primarily R&D in nature. University research park directors were asked to report whether private sector tenants were primarily engaged in research related activities. For example, overall employment in the drugs and pharmaceuticals sector was 54,057 (as shown in Table 5) and research park directors surveyed indicated that, for 70 percent of these jobs, the primary function was R&D in nature. The BEA and Statistics Canada industry multipliers include a specific scientific R&D industry sector which was applied to the share of each parks employment identified as such. Thus, Table 6 details research park employment in industries allocated for these multipliers including a large separate R&D employment total that spans almost every major industry group shown.

<sup>10</sup> <https://www.sciencecenter.org/upload/files/Full%20Report%20-%20Science%20Center%20is%20a%20Regional%20Engine%20of%20Economic%20Growth.pdf>

<sup>11</sup> <http://aurp.memberclicks.net/assets/documents/uatechparkeconomicimpact2009.pdf>

<sup>12</sup> [http://purdueresearchpark.com/sites/default/files/economic\\_impact\\_statement.pdf](http://purdueresearchpark.com/sites/default/files/economic_impact_statement.pdf)

Table 6 shows the variety of methods university research parks use to measure the broader impacts of their activities on their community, including firms attracted into the park (used by 92 percent), employment growth in existing/new business organizations (85 percent) and job growth in the region (64 percent). According to research park directors, as shown in Table 6, the two most important community impacts of research parks are firms attracted into the park and job growth in the region, with 92 percent of the parks identifying each as being of Very High or High importance. Employment growth in existing and new companies and the average salaries of park employees relative to the average wage in the region were also key methods of measuring the impact of a university research park on its community. The number of local residents hired and the number of people who receive workforce training were considered of less importance than measures of job and firm growth.

**Table 6: Usage of Methods for Measuring Benefits of a Park to its Community**

Methods Used by Parks to Measure Community Impacts	Percentage of Parks Using Measure
Firms attracted to the park	92%
Headcount growth in existing/new business organizations	85%
Job growth in the region	64%
Average salaries of park tenants relative to region	48%
Number of state or community residents hired	29%
Headcount growth in non-profit organizations	20%
Community Benefits Agreement in place	15%
Number of people that receive workforce training	10%

In summary, university research parks, while not immune from the effects of the recent recession, continue to advance and be a driver for job creation. Since the last survey in 2007, the university research parks sector has shown growth on multiple measures, including the development of new parks, the physical expansion of existing parks, increased employment of university research parks responding in both 2007 and 2012 surveys and continued strong activity in new business spin-outs. The direct jobs found in North American university research parks responding to the survey reached 379,754 jobs and the full economic impact of these jobs, after accounting for multipliers from industry supply chain and worker spending amounts to 941,258 jobs. (Note that this is only for the parks that responded—the 108 parks with a full survey response and an additional 30 parks that responded only to the employment portion of the survey. These 138 parks make up 79 percent of the parks that received the survey.)



### **Building at the Scale of a State: Purdue Research Park Network**

The Purdue Research Park network provides a statewide presence, with sites in West Lafayette, Indianapolis, Merrillville and New Albany. Each site offers technology-based business incubator facilities that support entrepreneurial environments. The park network has more than 240 companies that employ about 4,100 people. Many of these companies are based on Purdue University innovations and technologies. A 2011 independent study by Thomas P. Miller and Associates reports that the park network provides an annual economic impact of \$1.3 billion to the State of Indiana. Between 1999 and 2010, \$256 million has been invested in facilities and infrastructure for the park network.

This statewide network reflects a significant partnership between Purdue University and the State of Indiana. Three of the four Purdue University Research Park network sites have made use of Indiana's Certified Technology Park (CTP) program. Under the program, the state and the municipality allocate anticipated tax collections of up to \$5 million to support facility and land improvements designed to foster economic development.

By investing Purdue Research Park funds and leveraging tax-increment financing through the state's Certified Technology Park program, the park network has doubled its developed land space from 1 million square feet in 2000 to 2 million square feet in 2010. This growth has brought dedicated space to startups and expanding companies based in the park network.



### **Linking a University In New Ways for Strengthening Regional Industry Drivers: McMaster Innovation Park**

The McMaster Innovation Park is a relatively new university-affiliated research park started on a 37-acre site with a long industrial history, having been a Westinghouse foundry and lamp plant starting in 1913 and most recently an appliance manufacturing facility for Camco until its closing in 2004. Staying true to its roots and the industrial strengths of the Hamilton, Ontario region, the McMaster Innovation Park has created important new research and development centers to collaborate with leading manufacturing industries in the region. In this way, the impact of McMaster Innovation Park will go far beyond the direct employment found at the site and foster innovation and top talent needed to support the future competitiveness of leading industries in the region.

The first research and development facility was CanmetMATERIALS. It is the largest research center in Canada dedicated to the fabrication, processing and evaluation of metals and materials, with a mandate to work closely with industry clients and stakeholders in three specific sectors—

Transportation, Energy and Metal Manufacturing. McMaster Innovation Park is site of one of the two facilities of CanmetMATERIALS, with the other being in the University of Calgary University Research Park.

The second signature research and development facility at McMaster Innovation Park to strengthen the region's industry base is the new McMaster Automotive Resource Center (MARC), opened in May of 2009. MARC is one of only a handful of automotive research centers in the world located in an academic setting. It will focus on developing, designing and testing hybrid automotive technology and other sustainable solutions for the auto industry in its 80,000 square foot facility, bringing together teams of engineers, scientists, and their students from the university to collaborate with industry's own engineers and scientists.







## THE CHANGING FACE OF UNIVERSITY RESEARCH PARKS: TRENDS IN THE PHYSICAL DEVELOPMENT OF UNIVERSITY RESEARCH PARKS

A crucial characteristic of all university research parks is their physical development. While the research park model has been in existence for nearly 60 years, the physical development of university research parks continues to evolve. This section describes the trends underway in the physical development of research parks and describes key issues and challenges impacting their evolution.

### **Trend Toward Incorporating Mixed-Use, Live-Work-Play Development Continuing to Unfold and Transform the Physical Environments of University Research Parks**

A common denominator in the physical development of university research parks is having a mix of multi-tenant and single tenant commercial space supportive of research and development activities. These more R&D-oriented commercial real estate buildings often include a range of enhancements that are not found in typical commercial office space, such as increased air handling systems, higher floor heights and loading capacity, presence of chilling and wastewater pre-treatment systems and increased and redundant electrical power systems. Many university research parks also house more specialized and dedicated laboratory facilities, often associated with a specific university research center that is seeking to engage in industry collaborations. Instructional facilities, many targeting continuing education, are also becoming more widespread in university research parks. It is also common to see basic hospitality services, such as restaurants and even hotel and conference centers, on a university research park site. As presented in Table 8, 75 percent of university research parks contain specialized laboratory facilities, 45 percent contain university instructional facilities, 40 percent have restaurant space, 26 percent contain conference facilities and 13 percent contain hotels.

A more far-reaching change in the physical development of university research parks is the trend towards incorporating mixed-use, live-work-play environments. The beginnings of these mixed-use developments were found in many of the new university research parks brought on line over the last decade, such as Centennial Campus (affiliated with North Carolina State University), Mission Bay (affiliated with the University of California San Francisco) and the Fitzsimmons Life Science District in Colorado (affiliated with the University of Colorado's academic medical center).

The survey finds, as shown in Table 7, that even established university research parks are adding more physical developments to transform themselves into thriving live-work-play environments. While today only 7 percent of university research parks offer non-student housing, 21 percent of university research parks are planning such developments within the next five years. Non-food/restaurant retail is also on the rise, with projected growth within the next five years from just 12 percent of existing university research parks currently offering such services, to 30 percent based on university research parks' plans to offer such facilities.

Further aggregate analysis of research park survey responses finds that in 2012 the share of university research parks that are "mixed-use" involving food/restaurant, non-food/restaurant retail and housing (either student or non-student) involves only 6 percent of all university research parks. Within five years, the share of university research parks with "mixed-use" development is projected to rise to 21 percent.

**Table 7: Research Park Facilities**

	Currently in Park	Planned Within 5 Years
Specialized laboratory facilities	74%	45%
University instructional facilities	45%	27%
Food/Restaurants	40%	41%
Conference center	26%	22%
Other education facilities	19%	13%
Hotel	13%	25%
Other retail shops	12%	30%
Student housing	8%	11%
Other residential	7%	21%

With the growing trend towards more mixed-use development, university research parks are becoming even more integrated as signature developments for creating the dynamic, life-style communities that attract high-skilled and entrepreneurial technology professionals to a region. These new physical developments unfolding at university research parks are creating the physical environments that capture the characteristics that drive rising urban starts as identified in the ongoing *World Winning Cities* research program by Jones Lang LaSalle of LaSalle Investment Management.<sup>14</sup>

- **Being Technology Rich:** Technology hubs—whether Raleigh-Durham or Austin, Texas or Helsinki, Finland—with high-value, knowledge-intensive industries linked to strong research and educational infrastructures—are seen as key to offering the quality of life needed to retain and attract highly educated knowledge workers.
- **Resort/Urban Hip with Urban Sustainability:** The quality of the urban environment will become a more important determinant of city competitiveness, particularly in mature cities. Cities will be making substantial efforts to improve their urban landscapes and their cultural and entertainment offerings, recognizing that they are the key ingredients in attracting and retaining footloose, well-educated knowledge workers.

In the future, university research parks may be transformed into broader districts creating the vibrant industrial commons for technology-based economic development that is envisioned as key for regional competitiveness, as highlighted by Harvard professors Gary Pisano and Willy Shih in their work.

### **University Research Parks are Increasingly Part of Urban Redevelopment**

Following the trend towards more mixed-use, live-work-play developments at university research parks is an evident shift towards more urban locations as part of overall redevelopment efforts. Overall, 35 percent of university research parks are located in urban areas; however the trend is moving slowly toward more urban locations, as 40 percent of the university research parks formed since 2000 are in urban areas, compared to 32 percent of research parks formed prior to 2000.

The development of urban university research parks has become an important component of overall efforts to promote urban redevelopment, with 45 percent of urban research parks located in distressed communities. Key examples of urban redevelopment efforts centered around research parks include the development of the University of Maryland BioPark and the Science and Technology Park at Johns

<sup>14</sup> See <http://www.joneslanglasalle.com/Pages/WorldWinningCities.aspx>

Hopkins, both in Baltimore, Maryland and CORTEX research park in St. Louis, Missouri, affiliated with Washington University and St. Louis University.

### **Financing the Ongoing Physical Development of University Research Parks Stands Out as a Key Challenge**

University research park directors indicated through the survey that the greatest challenge facing them would be obtaining capital for park development and renovation. Eighty-two percent indicated that this financing challenge was of Very High or High significance. ✓

Another leading development challenge for university research parks reported in the survey was identifying, supporting and growing a sufficient tenant base. Seventy-eight percent of respondents reported that this challenge was of Very High or High significance. ✓

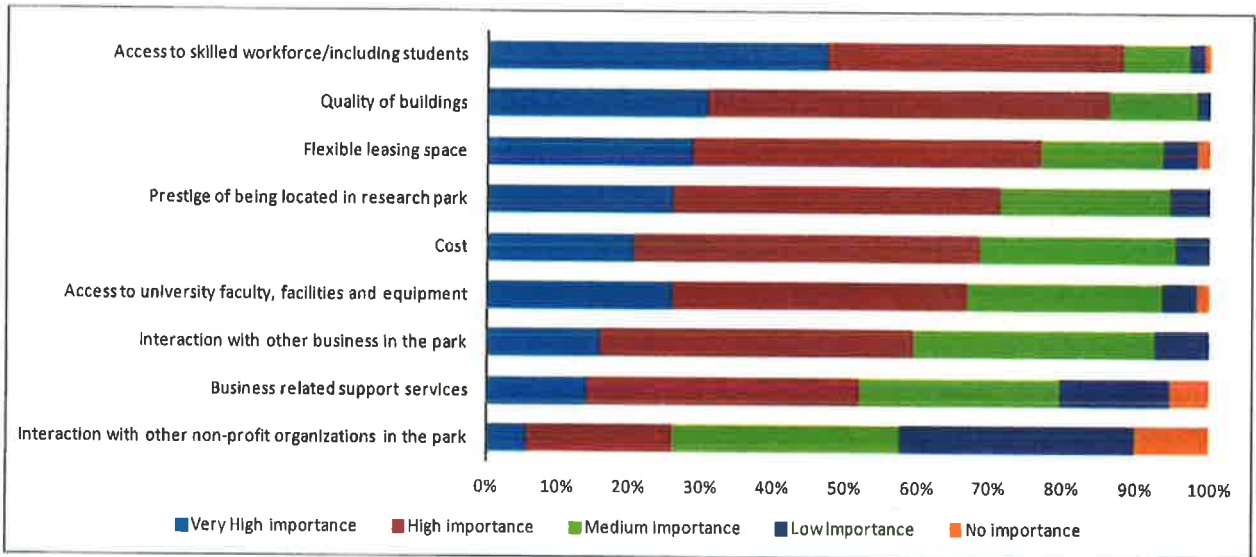
Below is the average rating, out of a scale of 1 to 5 where 1 is "No Significance" and 5 is "Very High Significance", that the university research park directors reported on the key development challenges facing university research parks in the next few years:

- Capital for park development and renovations – 4.7
- Identifying, growing and supporting a sufficient tenant base – 4.3
- Equity capital for tenants – 3.9
- Financing for wet-lab space – 3.8
- Financing for multi-tenant space – 3.8
- Competition from other sources – 3.3
- Decreasing demand for office space as companies move to operate virtually – 2.9
- Insufficient customer use to expand retail/commercial components of the park – 2.7
- Loss of developer interest in partnering with research parks – 2.6
- Limitations on the use of tax-exempt financing for buildings within the park – 2.6

### **To Attract Tenants, University Research Parks Also Have to Get the Basics of Quality and Cost Right**

While the key factor differentiating university research parks from science and technology parks and standard office parks are the potential linkages with affiliated universities along with the new trends towards mixed-use, live-work-play environments, four of the top five reasons why tenants locate in a research park relate to the quality of buildings, flexibility in leasing, reputation and cost of locating in the research park (see Figure 8). Thus, while university interactions are the key differentiating factor for university research parks, the real-estate basics of quality and cost cannot be ignored. ✓

**Figure 8: Reasons Why Tenants Locate in University Research Parks**



In summary, the survey points to a future in which many university research parks will be transformed into broader districts encompassing the vibrant signature live-work-play developments critical for driving technology-based economic development within regions.

**Re-envisioning the 21st Century University Research Park:  
The New Master Plan for Research Triangle Park**

With 7,000 acres, 170+ companies, over 39,000 workers and 22.5 million sq. ft. of built space, Research Triangle Park remains the largest research park in North America. According to the 2012 Master Plan for Research Triangle Park: "In today's world many of the qualities that made the Park so successful in earlier decades run counter to trends in innovation industries and land stewardship. Whereas earlier generations of American workers fled urban areas for newly built, suburban and car-accessible employment centers, today's Innovation workers seek the greater connectivity, convenient amenities and vitality that comes from a denser mix of uses, as well as a firmer commitment to sustainability."

With that in mind, the 2012 Master Plan for Research Triangle Park sets out a new direction of creating a new mixed-use center to create an innovative knowledge community at RTP to attract the next generation of knowledge workers.



*Photo courtesy of the Research Triangle Foundation.*

Known as the "Triangle Commons," this new mixed use center aims to be a destination at RTP merging the social needs of a leading-edge research center with the functional needs of a vibrant mixed use center. It will offer transit-oriented development, retail space, conference center and hotel and up to 1,400 residential units integrated with parks and stream corridors—along with a range of research-based office space with a significant amount of incubator and swing space.

### **An Urban Research Park to Redefine a City: St. Louis CORTEX**

CORTEX stands for the Center of Research, Technology and Entrepreneurial Exchange. Its ambitions are to redefine the physical landscape of St. Louis, developing a 240 plus acre area into one of the nation's leading research districts. CORTEX involves a collaboration of Washington University, Saint Louis University, BJC Healthcare, the University of Missouri-St. Louis and the Missouri Botanical Garden.

Unlike other research districts, CORTEX is designed for live, work and play. Its focus is on life sciences...and it will seek to provide everything a growing life sciences company needs to succeed—from biotech facilities and research relationships to neighborhood amenities with a high quality of life to strong economic incentives and competitive cost of doing business.



*Photographer: Bill Zbaren; courtesy of CORTEX*





## THE BASICS OF RESEARCH PARK OPERATIONS IN 2012 – SIZE, LOCATION, GOVERNANCE



This concluding section offers those seeking more in-depth knowledge of the structure, governance, budget and other detailed information on the characteristics of university research parks in 2012. These basics of university research park operations can be considered benchmarks, and are particularly important for those seeking to form new university research parks.

### **Typical Park Characteristics**

The typical university research park is 119 acres, has 7 buildings open and is located in a suburban jurisdiction with a population of 500,000 or less. Table 8 presents a profile of a typical North American university research park.

**Table 8: Profile of a Typical North American Research Park Based on Median Values from Survey Responses**

Typical Research Park	
<b>Size</b>	<ul style="list-style-type: none"> <li>• 119 acres</li> <li>• 7 buildings open</li> <li>• 250,000 sq ft, 90% of space is currently occupied</li> <li>• 25,000 sq ft incubator space</li> </ul>
<b>Location</b>	<ul style="list-style-type: none"> <li>• Located in a suburb</li> <li>• Population of fewer than 500,000</li> </ul>
<b>Governance</b>	<ul style="list-style-type: none"> <li>• Operated by a university or a university-affiliated non-profit</li> </ul>
<b>Tenants</b>	<ul style="list-style-type: none"> <li>• 26 resident organizations</li> <li>• 64% for-profit companies</li> <li>• 24% university facilities</li> <li>• 4% government agencies</li> </ul>
<b>Employment</b>	<ul style="list-style-type: none"> <li>• Typical park employs 850</li> <li>• Major industries include software, aerospace/defense and biosciences</li> </ul>
<b>Finances</b>	<ul style="list-style-type: none"> <li>• Operating budget of less than \$1 million a year</li> <li>• Revenue primarily from park operations, but also university, state, local and other sources</li> <li>• 28% of parks reported generating less than 5% retained earnings, 34% of parks reported no retained earnings</li> </ul>
<b>Services</b>	<ul style="list-style-type: none"> <li>• Provide a range of business and commercialization assistance services including:               <ul style="list-style-type: none"> <li>▪ Help accessing state and other public programs</li> <li>▪ Linking to or providing sources of capital</li> <li>▪ Business planning</li> <li>▪ Marketing and sales strategy advice</li> <li>▪ Access to subsidized space</li> <li>▪ Technology and Market Assessments</li> </ul> </li> </ul>

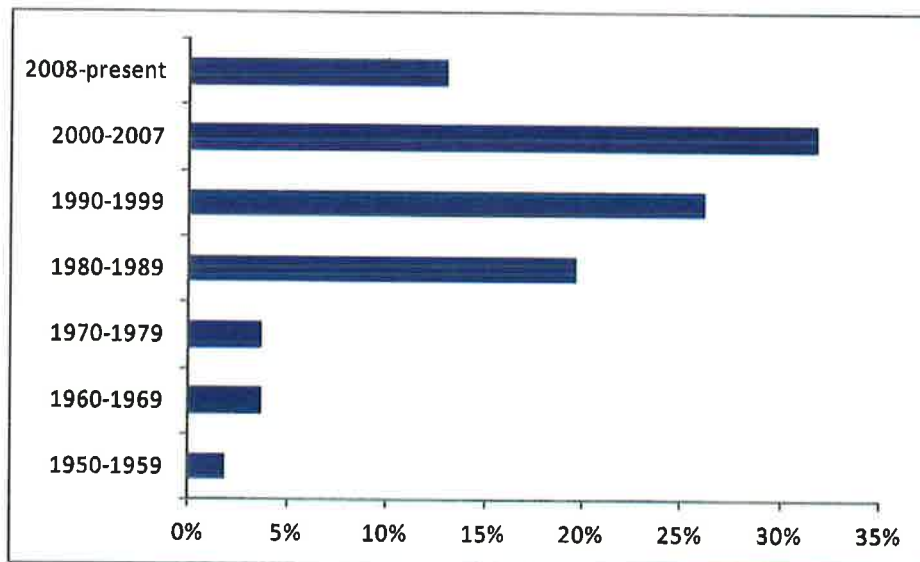
**Overall university research parks are quite diverse. Some selected descriptive statistics based on the survey responses are as follow:**

- 49 percent of university research parks are located in suburban areas, 35 percent are located in urban areas and 16 percent are in rural areas.
- 29 percent of university research parks serve communities with a population of fewer than 100,000, 32 percent serve communities of 100,000–499,999, 17 percent serve populations of 500,000–999,000 and 23 percent serve populations of a million or more.
- There has been rapid growth in the development of university research parks over the past decade, with 40 percent of existing university research parks forming between 2000 and 2009.

Overall the average research park in the survey was established in 1995, built its first building in 1997 and completed its most recent building in 2008. The earliest park opened in 1951 and the most recent in 2011<sup>15</sup> (Figure 9);

- Overall, 23 percent of research parks are located in distressed communities, but for university research parks located in urban jurisdictions, 45 percent are located in distressed communities, indicating the importance of university research parks in urban redevelopment efforts across the country.

**Figure 9: Year Research Park was Established**



## Governance

There is a great diversity of governance structures in place at university research parks. Half of university research parks are managed either by a university affiliated non-profit (31 percent) or directly by the university (19 percent). Eighteen percent of university research parks are governed by a governmental or quasi-governmental agency, and 17 percent are operated by independent, private non-profits that may or may not include university representation. Few parks, 5 percent, are managed by a for-profit developer (see Table 9).

<sup>15</sup> Three parks that have just started operations completed surveys but were not included in this analysis.



**Table 9: Park Governance Structure**

Park is Governed by	Percentage of Total
University-affiliated non-profit	31%
Affiliated university	19%
Government agency, quasi-public corporation or public authority	18%
Independent, private non-profit	17%
Formal joint venture among diverse organizational types	6%
For-profit developer	5%
Other	5%

### Park Budgets and Capital Spending

The parks surveyed varied greatly in the size of their annual operating budgets; but, half of the parks (50 percent) reported an annual operating budget of less than \$1 million, with 29 percent of the respondents reporting a budget of less than \$500,000. One-fifth of the parks reported operating budgets of \$1–\$3 million, 21 percent reported budgets of \$3–\$10 million and 9 percent reported budgets of more than \$10 million (Table 10). The median operating budget lies in the range of \$500,000 to \$1 million. As presented in Table 12, the overwhelming majority of park operating funds, 80 percent, are derived from operations, with host universities providing 8 percent and state and local governments 5 percent.<sup>16</sup>

The parks surveyed also vary tremendously in terms of their average annual level of capital expenditures. The majority, 57 percent, of parks reported average annual expenditures of less than \$1 million per year, with 28 percent of parks reporting average annual expenditures of \$1–\$10 million and 14 percent of parks reporting average annual expenditures exceeding \$10 million (see Table 11). As presented in Table 12, the sources of capital funds are more diverse than those of operating funds, with park operations accounting for 48 percent of the funds used for capital expenditures, host universities providing 19 percent and state and local governments 11 percent.

**Table 10: Current Annual Operating Budget and Average Annual Capital Expenditures**

	Current Annual Operating Budget	Average Annual Capital Expenditures
	Percentage of Parks	Percentage of Parks
Less than \$500,000	29%	46%
\$500,000–\$999,999	21%	11%
\$1,000,000–\$2,999,999	20%	17%
\$3,000,000–\$4,999,999	14%	8%
\$5,000,000–\$9,999,999	7%	3%
\$10,000,000–\$14,999,999	4%	1%
\$15,000,000 or more	5%	13%

<sup>16</sup> The parks provide data on the range of operational and annual capital spending, not the actual amounts, and data on the distribution of operational and capital spending source. To calculate to overall percentage the mid-point of each spending range was multiplied by spending by source and analyzed.

**Table 11: Reported Sources of Operating Revenue and Capital Expenditures**

Source	Operation Expenditures Percentage (%)	Capital Expenditures Percentage (%)
Park Operations	80%	48%
University	8%	19%
State and Local Government	5%	11%
Federal Government	2%	10%
Corporate/Foundations	3%	6%
Other	2%	6%

Nearly two-thirds of the university research parks surveyed reported that they had generated retained earnings during the past 5 years. Twenty-eight percent of the parks reported average annual retained earnings that equaled 5 percent or less of operating revenue; 13 percent reported average annual retained earnings of 5–10 percent; and 24 percent reported average annual retained earnings of 10 percent or greater. It is important to note, however, that 34 percent of parks reported no retained earnings whatsoever (see Table 12).

**Table 12: Average Annual Retained Earnings Generated over the Previous 5 Years**

Average Annual Retained Earnings Generated	Percentage of Total
No retained earnings generated	34%
Positive but less than 5% of operating budget	28%
5% up to 10% of operating budget	13%
10% up to 15% of operating budget	7%
15% up to 20% of operating budget	5%
20% or more of operating budget	12%

It must also be recognized, as reported in Table 11, that park annual operating budgets tend to be small; 50 percent of the parks have an operating budget of less than \$1 million. This suggests that where retained earnings exist, with a few exceptions, the amounts are very small. Thus, research parks, which are undertaken to diversify local economies and build stronger industry–higher-education partnerships, usually require, at least in the short-term, cross subsidization by their partners, communities and higher-education sponsors.

### **Role of Private Developers**

The common approach to financing and constructing buildings in university research parks is to hire private developers on a per-building or per-project basis. Seventy-five percent of the responding parks reported that they use developers on a case-by-case basis, 19 percent work with private developers that serve as master developers overseeing and financing the development of buildings in the entire park and an additional 19 percent work with private developers as developers of “neighborhoods,” “clusters,” or other groupings of buildings within the park. Nine percent of the parks are managed and financed by private, for-profit developers. Only 17 percent of the responding parks report that they do not work with developers. Fourteen percent of the responding U.S. parks reported that they or their developers have utilized New Market Tax Credits.

## Access to University Services and Amenities Offered

University research parks often provide tenants with access to a variety of university services, including university recreational facilities, lab animal-care facilities, hazardous material handling, library-information services, parking, and bus or transportation systems. Some parks also allow employees to serve as adjunct faculty. Park managers were asked to identify which benefits they offer and the importance placed on each benefit by their tenants. As presented in Table 13, most parks offer parking (71 percent), access to university libraries/information systems (58 percent) and access to recreational facilities (56 percent). Park managers felt that their tenants placed the most importance on parking and access to university HR services. Animal-care facilities, though offered by only 19 percent of parks, were perceived by those park managers as being the most important service offered by their parks.

**Table 13: University Services and Amenities Offered and Their Perceived Importance to Tenants**

Benefits Offered	Percentage of Parks	Importance <sup>†</sup>
Adjunct status at university for key employees	33%	3.66
Animal-care facilities	19%	4.00
HR services	19%	3.95
Access to and use of recreational facilities and privileges	56%	3.45
Hazmat handling	25%	3.78
Library/information services	58%	3.59
Parking	71%	3.99
University priced tickets to cultural/athletic events	27%	3.10
Use of bus or other transportation systems	45%	3.65

Note: Importance based on a scale of 1 (No Importance) to 5 (Very High Importance)

These basics of university research park operations suggest there is no one-size-fits-all approach for university research park undertakings, but a range of options in how to govern, pursue development, operate and fund a university research park.







# ADVANCING INNOVATION

Financial and real estate markets evolve. Available resources change. Priorities must be reset. Institutions are being called upon to produce new sources of revenue, commercialize intellectual property and create new jobs for their communities. Today's University Research Park environment requires integrating multiple funding mechanisms to deliver Place that can be flexibly adapted operationally and financially.

With nearly \$1 billion in transactions since formation in 1982, The University Financing Foundation has created Place for Institutions to grow, adapt and thrive in their communities. Place that uniquely provides for blended operational uses (i.e. research, commercial, retail and administration) and efficient financing based on each different use. Every circumstance is different and requires a deep understanding of the critical role Research Parks play for Institutions. Start a conversation with TUFF.

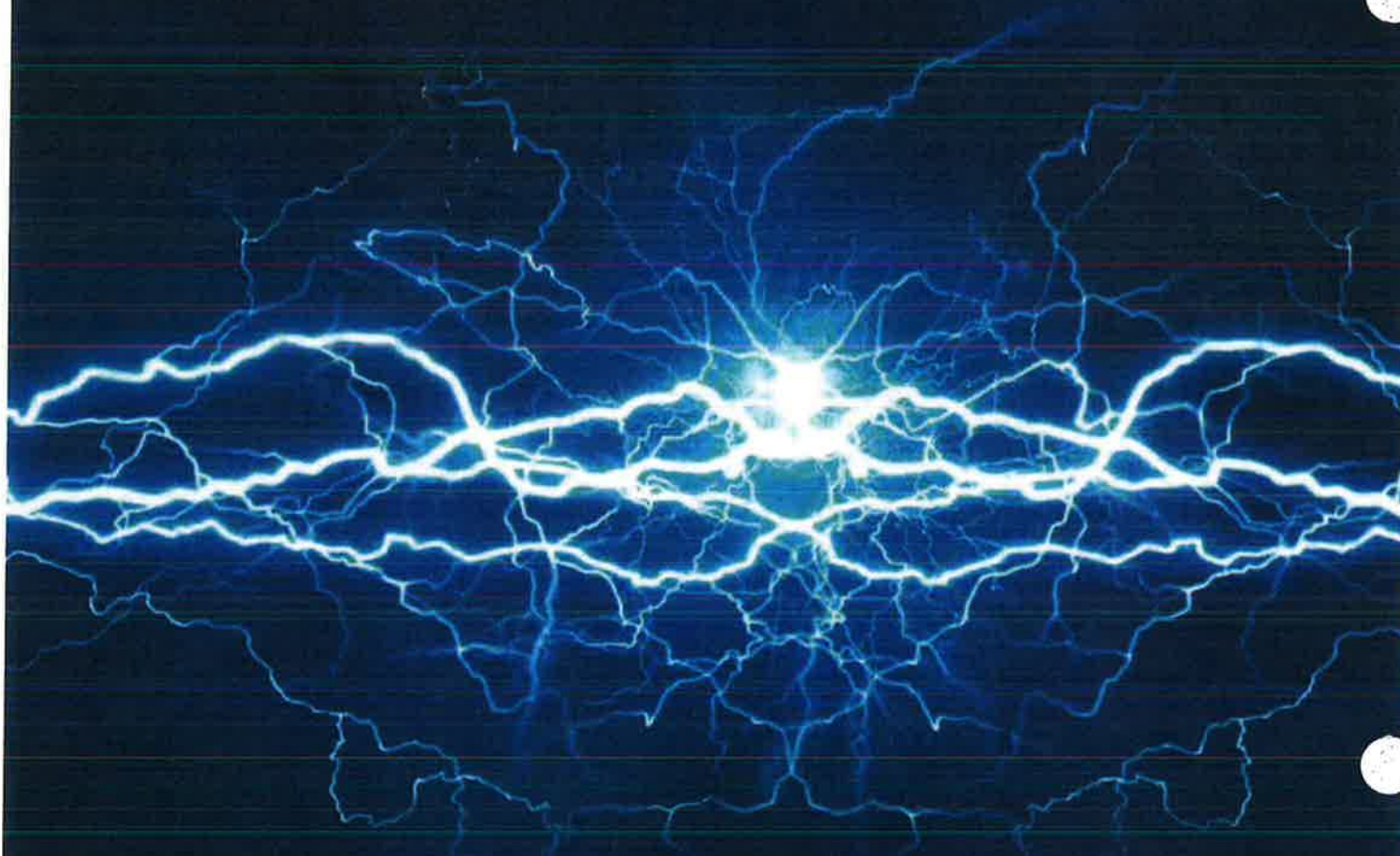


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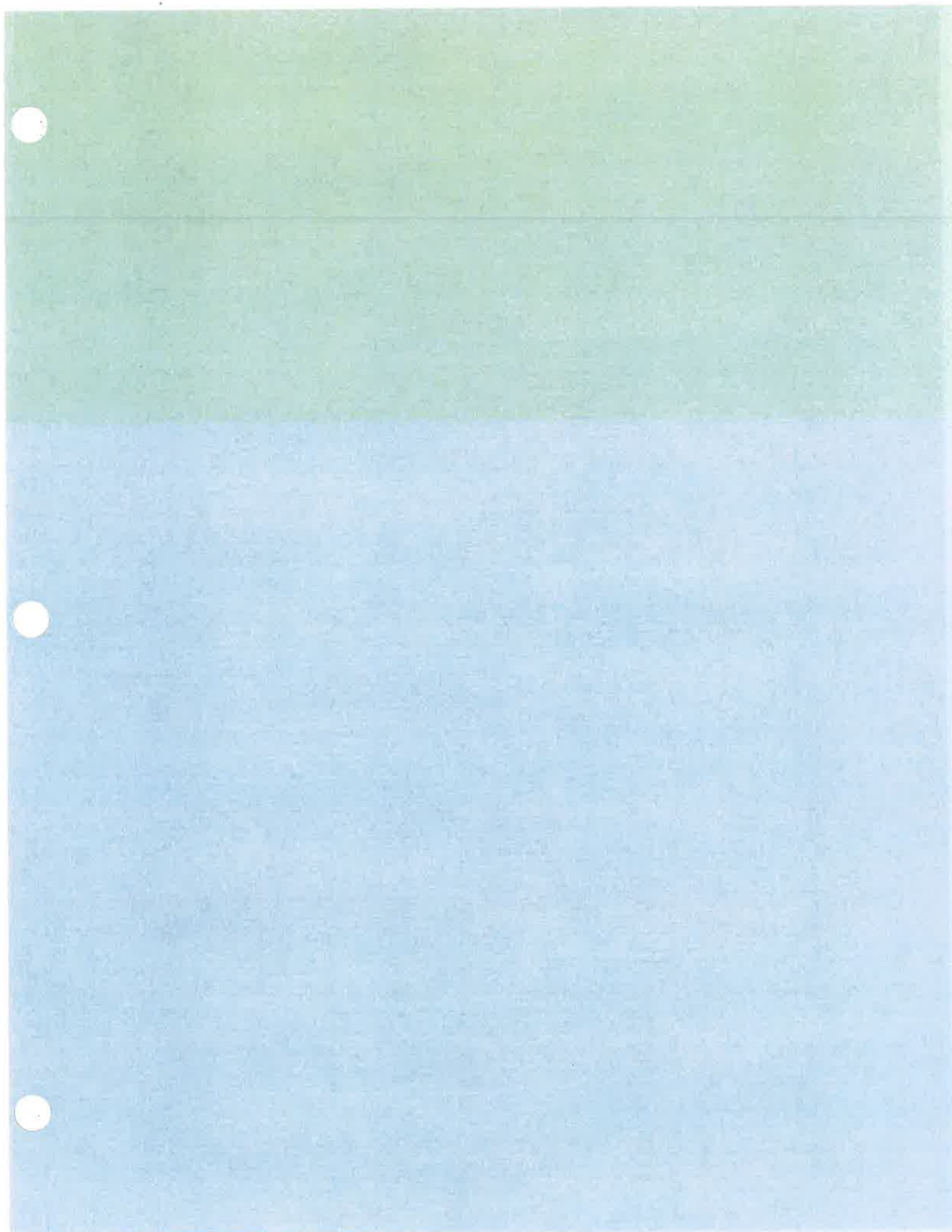
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In Greater Philadelphia, innovation means business. And the Science Center is at the core of that business. **Our graduate and resident companies generate \$9.4 billion in regional economic output annually.** We support the entrepreneurs who are building our region's economic future. And it all grows exponentially from the core at the Science Center.

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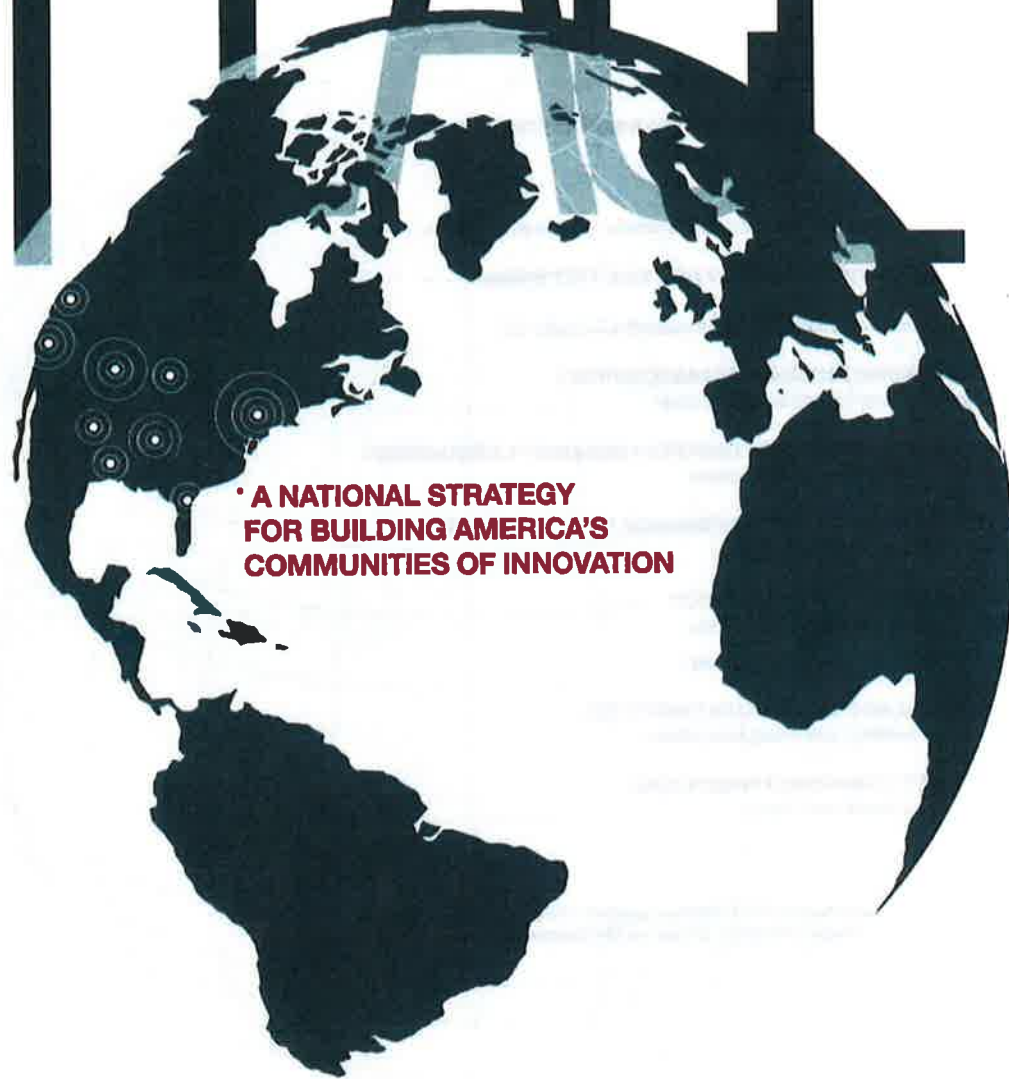


THE POWER OF PLACE



# THE POWER OF

# PLACE



**• A NATIONAL STRATEGY  
FOR BUILDING AMERICA'S  
COMMUNITIES OF INNOVATION**



**ASSOCIATION OF  
UNIVERSITY  
RESEARCH  
PARKS**

*Creating Communities of Innovation*

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*The individuals named above served in their individual capacities. The endorsement of the views expressed in this document, of each advisory committee member or their associated organizations, is not implied.*

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OCTOBER 2, 2008

**DEAR COLLEAGUES:**

The last decade vividly demonstrates the economic forces leading to the globalization of science and innovation. Delegations of federal officials have visited China, India, the Middle East and other countries, and returned amazed at the speed and scale at which national governments outside of the United States are developing university research and science parks and centers, national laboratories, and other physical manifestations of science and technology.

Within our own nation, research and science parks, technology incubators, venture accelerators and research universities traditionally have been the province of state and local governments. Individual entrepreneurship, local financial investment, and world-class research universities are part of the genius of the American innovation system that still leads the world.

The United States government annually funds billions of dollars of research and development, and it plays a major role in setting national economic development programs. Earlier this year, the Association of University Research Parks (AURP), in conjunction with the National Academy of Sciences, conducted a forum in Washington D.C. to examine the role of research and science parks within the global context. As a result of that forum, AURP has developed a set of recommendations and assembled an advisory board who represent research and science parks, technology incuba-

tors, university financing foundations, seed and venture capital groups, and science and technology development organizations.

*The Power of Place* explores a number of suggested federal initiatives, reforms and investments that will leverage the power of innovation in this country. With the new Presidential Administration and Congress in 2009, we hope *The Power of Place* stimulates discussion, legislation, and the expansion of and support for Communities of Innovation within the United States.

*The Power of Place: Better Science; Better Innovation; A Better World.*

Sincerely yours,



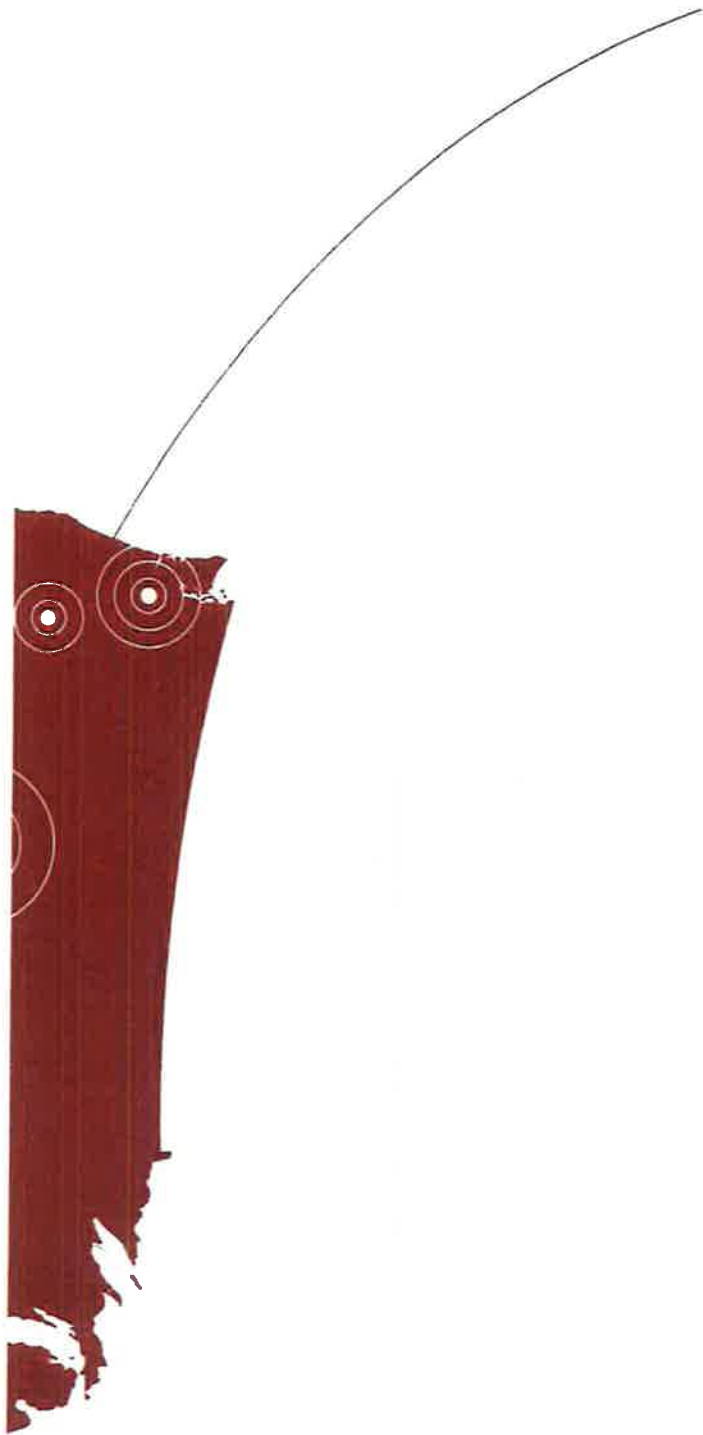
**J. Michael Bowman**  
*President, Association of University Research Parks*  
Chairman and President  
Delaware Technology Park Incorporated

A handwritten signature in cursive script that reads "J. Michael Bowman".



**Brian Darmody**  
*AURP Power of Place Advisory Board Chair and Principal Author*  
Associate Vice President for Research and Economic Development  
University of Maryland

A handwritten signature in cursive script that reads "Brian Darmody".



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## POLICY RECOMMENDATIONS

- **Establish American Innovation Zones:** The Innovation Zones would serve as the centerpiece of efforts to modernize the U.S. approach to fostering competitive research and development. Innovation Zones are a critical next step towards American competitiveness, encouraging research in such a way as to accelerate investment and economic development around research clusters. The Innovation Zone approach envisions establishing objective criteria for national innovation assets, including research parks, technology incubators, universities, federal laboratories, and adjacent properties, and then providing regulatory reforms and economic incentives for their accelerated development.
- **Enact Federal Innovation Zone Partnership Program:** The federal government should establish a plan to competitively create research centers within the Innovation Zones that would require matching grants from state governments, local governments and private industry. These centers would focus on areas of high national needs, including energy research, homeland security, food safety, and global climate change.
- **Build Sustainable Communities of Innovation:** Incentives for sustainable 'smart growth' development should be central to establishing American Innovation Zones. The U.S. Department of Housing should explore best practices nationally to encourage density and mixed-use development in American Innovation Zones in urban areas, which will encourage researchers and entrepreneurs to live where they work, and reduce sprawl.
- **Encourage Federal Leasing and Federal Lab Construction in Innovation Zones:** The federal government should target federal leases for research and federal lab construction and related activities within American Innovation Zones.
- **Reform Federal Tax Provisions for Facilities Funded by Tax-Exempt Financing:** Current federal policy on corporate sponsored and/or funded research performed in facilities funded through tax-exempt bonds unduly restricts flexibility in negotiating corporate intellectual property (IP) rights. Eliminating the current IRS restrictions or increasing the safe harbors under IRS regulations in American Zones of Innovation to allow greater flexibility in intellectual property negotiations will improve U.S. competitiveness, and increase the likelihood that corporate R&D will stay in the U.S.
- **Create Enhanced Preferences for Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) and National Institute of Standards and Technology (NIST) Technology Innovation Program (TIP):** The federal government should provide incentives to small technology start-up companies located in American Zones of Innovation to be awarded SBIR, STTR, and NIST's new TIP contracts and grants. Cluster development, collaboration, and targeting the benefits of federal research dollars will provide incentive for new investment in the Innovation Zones, and improve the quality of research through greater cooperation among public and private researchers.
- **Solidify the Tax Benefits for Research and Development:** By reauthorizing the research and development tax credit, Congress will return the U.S. to an even playing field with many of its global competitors for research investment. Beyond this first step, Congress should offer an enhanced benefit for companies that perform their research within an Innovation Zone, or who contract with Innovation Zones entities for research or development.
- **Expand Enhanced Use Leasing (EUL) Authority:** Expand current enhanced use lease authority to all federal agencies to create more American Innovation Zones adjacent to federal labs.
- **Establish a Federal Technology Foundation**  
A federal technology foundation should be established to work with government managed federal labs. A foundation modeled on existing university research foundations could enable these laboratories to more effectively commercialize technology and use existing federal research assets for local technology-led economic development.
- **Develop Comprehensive Government-wide Database**  
Access to a government-wide database on all federal R&D funding is necessary to ensure that important national innovation assets are properly understood and leveraged for technology innovation.
- **Fully Fund the America COMPETES Act**  
The U.S. Congress took a great step forward in passing the America COMPETES Act in 2007. The Act authorizes a substantial federal investment in high risk, high reward research and improves funding to many of the U.S. science agencies. Research institutions and companies in Innovation Zones stand to benefit from the America COMPETES Act, but the Act has not been fully funded by Congress. The new Administration and the next Congress must make funding the America COMPETES Act a priority.
- **Import Innovation:** Research parks and incubators in American Innovation Zones should be targeted to recruit foreign technology companies using 'soft landing' techniques similar to those pioneered by the National Business Incubation Association (NBIA).
- **Welcome Human Innovation Capital to the U.S.:** In order to ensure continued retention of highly-skilled researchers and technicians, the U.S. must offer competitive immigration incentives that welcome foreigners into our Communities of Innovation, and retain their talents through the H-1B visa process.





## ASSOCIATION OF UNIVERSITY RESEARCH PARK SUSTAINING MEMBERS

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# THE POWER OF PLACE

A NATIONAL STRATEGY FOR BUILDING  
AMERICA'S COMMUNITIES OF INNOVATION

*Art is 'I'; Science is 'We'* – Claude Bernard

Historically, American research innovation has led the way to progress in countless scientific disciplines. From establishing the first research park in the world, to building world-class research universities and federal laboratories while pioneering technology transfer and patent reform for public-private research partnerships, the U.S. has led the world in attracting research talent, funding scientific advances, and commercializing new discoveries. Innovations spawned in the basements, garages, dorm rooms, classrooms and laboratories of countless Americans will create jobs, foster the reversal of the U.S. trade imbalance, reduce U.S. dependence on foreign energy sources and attract and retain the brightest human capital. It will ultimately return the United States to the premier position it has historically enjoyed.

The United States is losing ground competitively. The ambitious entrepreneurs and scientists who are willing to invest time and money into an idea are being lost at a staggering pace to other countries. These foreign governments provide incentives for this U.S. human capital to uproot and move. These individuals find that the challenge of surviving in a foreign country is outweighed by the tremendous economic benefit these foreign communities provide.



At the present time, the U.S. is losing ground because we do not provide the *Place* for the Creative Class to prosper. We have left the responsibility of creating *Place* to local communities, many of which cannot bear the speculative burden of creating *Place* without governmental financial support. Policy support to attract foreign direct investment from across the globe into the U.S. is also urgently needed.

To that end, the Association of University Research Parks (AURP) offers a series of urgent recommendations for the U.S. Government, so that it can more precisely support American innovation and American innovators with both economic and policy-based changes. Our proposal targets the following:

- Creating American Innovation Zones to drive the creation of modern research and development collaboration;
- Formalizing a series of incentives that will support growth in these communities, including:
  - Reforming the tax code for tax-exempt financing of research park development;
  - Creating a permanent and enhanced research and development tax credit;
  - Expanding Enhanced Use Leasing (EUL) authority;
  - Making government-managed federal labs more effective partners in technology-led economic development;

- Fully funding the America COMPETES Act of 2007;
- Expanding the availability of visas for skilled researchers; and
- Encouraging in-migration of foreign start-ups through "soft landing" programs.

Each of these initiatives are elements of a single strategy to increase innovation and competitiveness. We call on Congress and the new Administration to enact comprehensive legislation incorporating the initiatives listed above to increase U.S. competitiveness and ensure that we remain the world's leader in science and technology innovation.

#### **U.S. COMMUNITIES OF INNOVATION IN 2008: THE CHALLENGE**

The global competition for scientific advances, research funding, and research talent threatens to eliminate any U.S. advantage. Many countries are now surpassing the U.S. with the creation of *Place* through direct national government funding of research parks and science cities. They are building new universities and national labs, and attracting top research talent and corporate funding to these new international Communities of Innovation. These countries have more than matched U.S. policies, and are providing financial and regulatory incentives for international corporations looking to establish research activities in particular districts and zones.

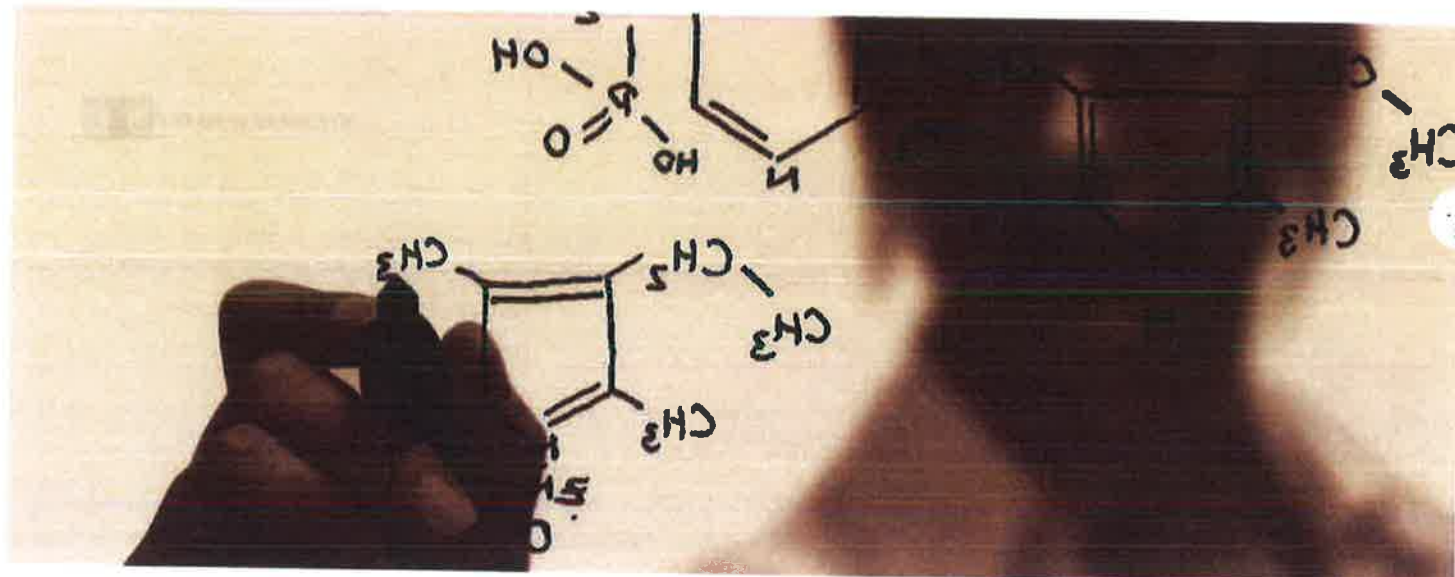
The United States has the necessary ingredients to match global competition—including world-class universities, individual entrepreneurship, and

a robust system of private enterprise. Individual states, including Michigan and Pennsylvania, have enacted new programs to create clusters of innovation through the support of technology companies and research conducted in knowledge zones. The State of Maryland, for example, has targeted state infrastructure investment and tax increment financing tools to areas adjacent to U.S. military research and development labs. These areas are absorbing the influx of thousands of researchers moving into the state that resulted from the latest Base Realignment and Closure Commission (BRAC) round in 2005.

However, U.S. federal economic development tools do not meet the global technology development challenges that competing nations and individual U.S. states have been addressing.

Many useful strategies for the U.S. have been promulgated, such as the National Academies' *Rising above the Gathering Storm*. *The Gathering Storm* makes the case for a greater emphasis on Science, Technology, Engineering and Math (STEM) education and other reforms of a broader and longer term nature.

*The Power of Place* notes emerging trends in the competitive landscape for research. It highlights a series of initiatives that will ensure that the United States is positioned to remain a leader in building "Communities of Innovation." These Communities of Innovation are colleges and universities, research parks, technology incubators, venture accelerators, federal labs and adjoining



neighborhoods. With the rise of energy prices, clustering researchers where they can both live and innovate is also timely.

*The Power of Place* is not about real estate development. Rather, it focuses on the enhancement of U.S. research by providing initiatives for economic and policy reforms. These will empower U.S. entrepreneurs and scientists in the commercialization of their intellectual property, thus retaining U.S. economic competitiveness.

### OUTCOMES

The economic growth associated with existing U.S. research and science parks has been substantial. New commercialization opportunities have created multiplier effects for job growth and start-up company support. By encouraging collaboration and the creation of Communities of Innovation, *The Power of Place* policy recommendations will increase domestic U.S. research and technology development and increase the effectiveness of federal research spending. These recommendations will also create a more attractive environment for in-bound foreign direct investment in research.

### NEW REALITIES AND NEW SOLUTIONS

Global technology competition, intellectual property challenges, "off-shoring" of domestic U.S. research and development, private equity involvement, and new approaches to commercialization are all forces that impact innovation. For the centers of research – research parks, technology incubators, smart growth corridors, universi-

ties, and federal intramural research facilities – changes in the environment for innovative research require these research participants to evaluate how to adapt to new market forces.

In 1951, the United States became home to the first research park in the world, Stanford Research Park in Palo Alto, California. Over the last three decades, other U.S. research institutions have continued to pioneer new Communities of Innovation. Beyond establishing new structures where research could be nurtured and then launched commercially, many local communities enacted policies to favor these types of investments in research.

### The U.S. Landscape

In 2007, AURP partnered with Battelle Technology Partnership to review the current state of research and science park development in the U.S. and Canada. This comprehensive study identified trends and emerging changes in research and science parks, and demonstrated the significant positive economic impact of research parks and technology incubators. Among the key findings:

- A new model for research park development is emerging that focuses on mixed-use space, planned multi-tenant facilities, and greater emphasis on partnerships with non-university entities, such as federal labs or corporate research and development.
- For every core research park job created, an additional 2.5 jobs are created within the local community, demonstrating the multiplier effect

of research park and technology incubator development. The total North American employment impact of research and science parks is over 700,000 jobs.<sup>1</sup>

People are the key to improving economic development, and people need a *Place* in which to innovate. The Communities of Innovation that are developed through research and science parks are precisely this kind of *Place*. The results are evident. Hundreds of thousands of high-paying, high-skilled jobs have been created, and U.S. intellectual property has been kept at home.

What the AURP-Battelle Study does not reflect is how many companies, innovators and scientists (i.e. U.S. payroll) have left the U.S. because, when compared to other countries, the price of *Place* in America is too expensive.

### An Expanding International Landscape

U.S.-led Communities of Innovation have been emulated across the globe, with large research and science parks developing in China, India, and the Middle East. The global landscape has not remained static. Presently, of the top ten largest research parks in the world, only one—The Research Triangle Park in North Carolina—is located within the United States. Brazil has developed a network of technology incubators financed by the national government that includes direct funding of hundreds of millions of dollars for start-up technology companies. India and China are building large research and science parks, and the increasing oil revenues in many

<sup>1</sup> Characteristics and Trends in North American Research Parks: 21st Century Directions (Executive Summary) October 2007.





nations in the Middle East are funding large-scale research and development investments that far surpass those being built in the United States.

Asia also provides several examples of world-class campuses that have started development with innovative approaches. Beyond their size, these new research and science parks demonstrate the importance of consolidating research, industry, education, and investment in a single cluster. These include:

- Vedanta, India: With \$1 billion (US) of planned investment over the next decade, the public-private non-profit venture will link university students, education, and state-of-the-art research in a single campus. Vedanta will house nearly half a million residents, and will be linked by design to major commercial centers and global commerce by rail, highway infrastructure, and air.<sup>2</sup>
- Biopolis, Singapore: Founded in 2003, Biopolis now encompasses approximately 12 million square feet of research space focused almost exclusively on pharmaceutical research and development. This park was filled to near capacity within a year of its opening as Glaxo SmithKline, Isis Pharmaceuticals, and other significant corporate players occupied its space. Significant growth has continued over the past five years.<sup>3</sup>
- Suzhou Industrial Park/Suzhou, China: More than 100 Fortune 500 companies have established a presence in Suzhou, linking commercial manufacturing with research, substantial corporate investment, direct exports, and residential communities. In existence for more than a decade, this joint development between China and Singapore

remains a significant force for growth and development in Asia.<sup>4</sup>

Top-ranked researchers from the United States are being recruited to lead teams within international research parks and centers associated with adjacent universities. Many of these international parks are led and financed by their national governments. Canada, which has a robust system of research parks, has begun to consider how research parks and incubators can become central to Canadian technology-led competitiveness strategy.

At the same time, innovation systems are changing. Science is becoming a more interdisciplinary, inter-institutional, and inter-global process. Innovations stemming from collaborations with university and federal lab spin-offs are accounting for a much larger share of innovations, according to a new study by the Information Technology and Innovation Foundation (ITIF).<sup>5</sup>

U.S. policymakers should be concerned about the decline of industrial support for U.S. academic research and development. A 2006 study by the National Science Foundation highlights the fact that many corporations are finding greater incentives in foreign countries, and increasing barriers to research in the U.S.<sup>6</sup> Federal funding of academic science and engineering research and development in the U.S. failed to outpace inflation for the second year in a row, according to a 2008 National Science Foundation study.<sup>7</sup>

All of these developments require for new federal policies that recognize the changing nature of innovation, and create hot spots of innovation which encourage cluster development to improve U.S. technological competitiveness.

The U.S. must develop a comprehensive national strategy to utilize physical and intellectual property, along with federal, state and local assets, to develop innovation zones supporting our research partnerships, research and science parks, and technology incubators. Congress and federal agencies should break down existing limits and restrictions on the flow of public and private resources to fund joint research initiatives, and stress *The Power of Place* - the physical proximity of innovation assets in formal zones of innovation.

<sup>2</sup> Chronicle of Higher Education (<http://chronicle.com/media/flash/v53/45/vedanta/>); The Stanford Daily, Indian College to be Modeled After Stanford, Oct. 24, 2007.

<sup>3</sup> Nature, Singapore: Filling Biopolis, Nature 426, 746-747 (16 October 2003).

<sup>4</sup> Chemical and Engineering News, Chinese Industrial Parks Up the Ante, Vol. 84, No. 44 (Oct. 30, 2006).

<sup>5</sup> Where Do Innovations Come From? Transfer Patterns in the U.S. National Innovation System, 1970-2006", By Fred Block <<http://www.longviewinstitute.org/people/block>> and Matthew Keller <<http://sociology.ucdavis.edu/people/mrkeller>> July 09, 2008.

<sup>6</sup> NSF Infobrief 06-328, September 2006.

<sup>7</sup> Survey of Research and Development Expenditures at Universities and Colleges, FY 2007, National Science Foundation (2008).

# CREATING COMMUNITIES OF INNOVATION

**THE AMERICAN INNOVATION ZONE,**  
Where Intellectual Property Intersects Real Property;  
Human Capital Connects Financial Capital

AURP proposes the creation of a new concept for innovation in the U.S.: a system of American Innovation Zones. The Innovation Zones would serve as the centerpiece of efforts to modernize the U.S. approach to fostering competitive research and development. Innovation Zones are a critical next step towards American competitiveness: encouraging research in such a way as to accelerate investment and economic development around research clusters. The Innovation Zone approach envisions establishing objective criteria for national innovation assets, including research parks, technology incubators, universities, federal laboratories, and adjacent properties – and then providing regulatory reforms and economic incentives for their accelerated development.

## **Objective Content-Based Criteria**

Entities eligible for designation as an American Innovation Zone would be those research institutions that have historically been producers of intellectual property and high technology economic development. The newly created Innovation Zone designation would apply to the following types of entities:

### **Research and Science Parks**

*(Including technology incubators and venture accelerators)*

These clusters of research encompass a wide universe of cooperating entities, including institutions of higher education, start-up incubators, stand-alone incubators, federal labs and their partners that are designed to promote technology transfer, research and business partnerships, and economic growth.

### **Colleges and Universities**

This would include accredited colleges and universities, including community colleges (those that are eligible for federal financial aid), and facilities located on land owned or controlled by one of these entities, as defined in the Higher Education Reauthorization Act.

### **Federal Labs**

*(as defined in the Stevenson-Wylder Technology Innovation Act)*

This definition includes federal laboratories, federally-funded research and development centers, or other centers owned, leased, or otherwise funded by a federal agency and the federal government, whether operated by the government or by a contractor.

### **Enhanced Use Lease (EUL) Locations**

Certain federal agencies are currently authorized to lease land and improvements to land to private sector entities. We recommend expanding this authority to all other federal agencies.

By establishing objective criteria for recognizing Innovation Zones, the ability to develop centers of innovation will be focused on the key characteristics and trends of effective research and development. The entity must be involved in the creation, promotion and commercialization of intellectual property. Manifestation of this activity will be considered through key attributes of successful Communities of Innovation to date, including:

- Trends towards greater intramural cooperation between federal labs and university researchers;
- A focus on sustainability as a central element of research park design;
- Greater emphasis on business incubation and focused research niches;
- Administrative and programmatic resources for the management of federal research grants;
- Experience in commercializing technology;
- Demonstrated local or state support for development initiatives; and
- The existence of international partnerships.

### **Incentives and Regulatory Reforms**

Unlike other national governments, the U.S. Government is not leading the effort to build research parks and related innovation clusters. Nevertheless, the U.S. Government does have at its command a number of resources



that can help the local development of innovation hubs across the country. Collocation and intramural cooperation between federal labs and Communities of Innovation result in higher quality research and improved technology. There are several categories of incentives that are essential to this proposal, to driving new advances within Innovation Zones, and to encouraging universities, incubators, and communities to develop and grow these communities. They include:

- **Federal Tax Reform for Facilities Funded by Tax-Exempt Financing: Decouple Intellectual Property Rights from Tax Exempt Status Analysis**  
Current federal policy on corporate sponsored and/or funded research performed in facilities funded through tax-exempt bonds unduly restricts flexibility in negotiating corporate intellectual property (IP) rights. Corporations based in the U.S. now have a choice of where to conduct their research and development activity. Countries competing with the U.S. have no parallel intellectual property restrictions, meaning more corporations are choosing to off-shore their research. Eliminating the current IRS restrictions or increasing the safe harbors under IRS regulations in American Zones of Innovation to allow greater flexibility in intellectual property negotiations will improve U.S. competitiveness, and increase the likelihood that corporate R&D will stay in the U.S.
- **Enhanced Preference for Small Business Innovative Research (SBIR)/ Small Business Technology Transfer (STTR) and National Institute of Standards and Technology (NIST) Technology Innovation Program (TIP)**  
The federal government should provide incentives to small technology start-up companies located in American Zones of Innovation to be awarded SBIR, STTR, and NIST's new TIP contracts and grants. Cluster development, collaboration, and targeting the benefits of federal research dollars will incentivize new investment in the Innovation Zones, and improve the quality of research through greater cooperation among public and private researchers.

- **Federal Innovation Zone Partnership Program**

The federal government should establish a plan to competitively create research centers within the Innovation Zones that would require matching grants from state governments, local governments and private industry. These centers would focus on areas of high national needs, including energy research, homeland security, food safety, and global climate change.

- **Fully Fund the America COMPETES Act**

The U.S. Congress took a great step forward in passing the America COMPETES Act in 2007. The Act authorizes a substantial federal investment in high risk, high reward research and improves funding to many of the U.S. science agencies. Research institutions and companies in Innovation Zones stand to benefit from the America COMPETES Act, but the Act has not been fully funded by Congress. The new Administration and the next Congress must make funding the America COMPETES Act a priority.

- **Solidify the Tax Benefits for Research and Development**

By reauthorizing the research and development tax credit, Congress will return the U.S. to an even playing field with many of its global competitors for research investment. Beyond this first step, Congress should offer an enhanced benefit for companies that perform their research within an Innovation Zone, or who contract with Innovation Zones entities for research.<sup>8</sup>

- **Build Sustainable Communities of Innovation: Dense is Smart**

Incentives for sustainable 'smart growth' development should be central to establishing American Innovation Zones. The U.S. Department of Housing should explore best practices nationally to encourage density and mixed-use development in American Innovation Zones in urban areas, which will encourage researchers and entrepreneurs to live where they work, and reduce sprawl.

- **Federal Leasing and Federal Lab Construction**

The federal government should target federal leases for research and federal lab construction and related activities within American Innovation Zones.

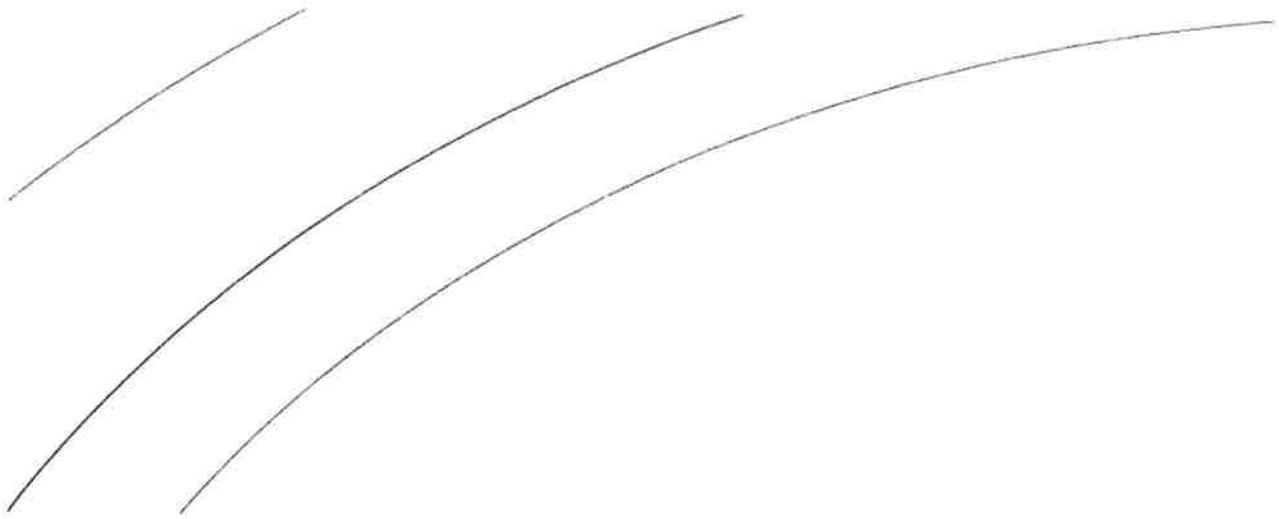
- **Importing Innovation**

Research parks and incubators in American Innovation Zones should be targeted to recruit foreign technology companies using 'soft landing' techniques similar to those pioneered by the National Business Incubation Association (NBIA).<sup>9</sup>

While the federal government needs to take a leadership role in this arena, partnerships with state and local governments, universities and other partners will be essential. In order to make the concept of the American Innovation Zone a reality, state governments must also review their current approaches to economic development to ensure that they foster these communities in a fashion that parallels the federal effort.

<sup>8</sup> Greater detail on the Research and Development Tax Credit is outlined in Section III.

<sup>9</sup> These "soft landing" offerings are more fully detailed in Section IV.



## POWER OF PLACE

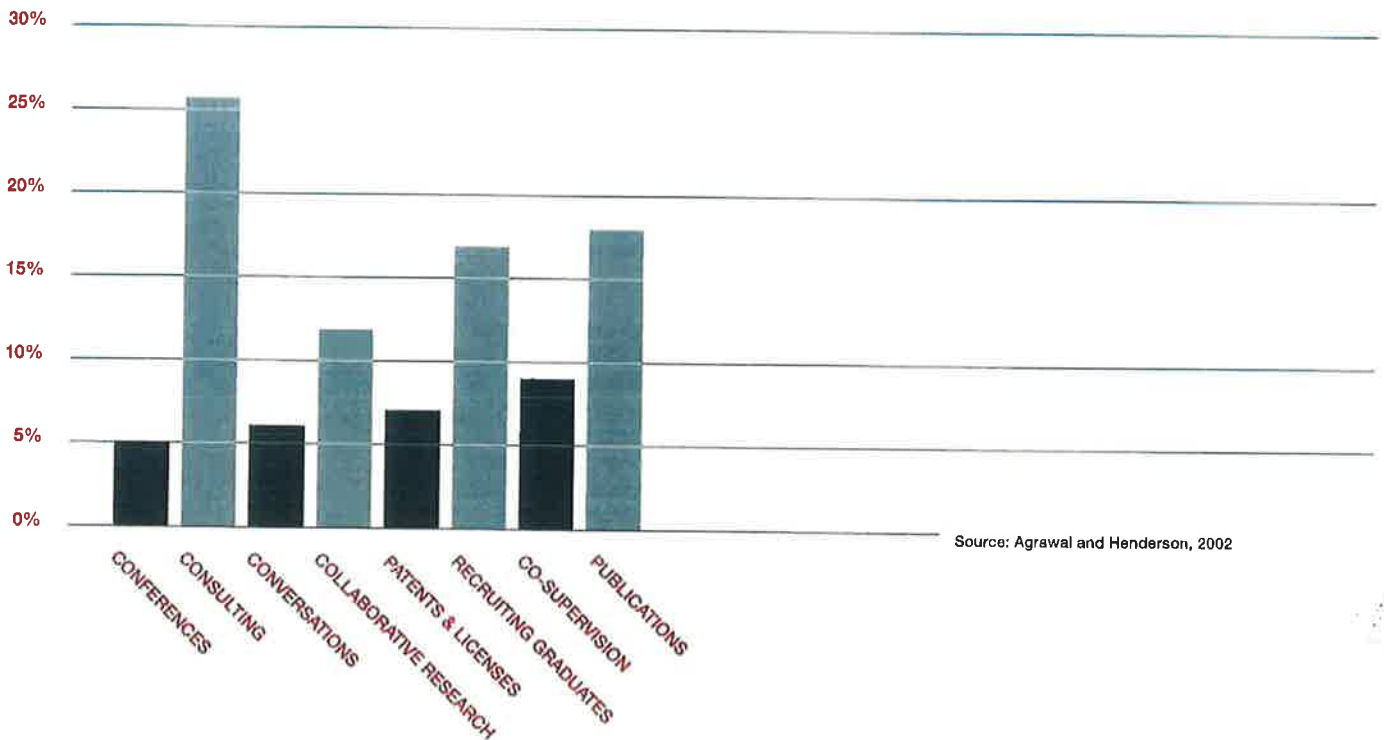
### Better Science

According to officials at the U.S. National Oceanic and Atmospheric Administration (NOAA), the probability of detection of thunderstorms rose from 59% to 89% after they moved their National Weather Service Research Center to the Centennial Campus at North Carolina State University. NOAA attributes this to faculty and student partnerships possible because of their location. It is because of projects like these that AURP honored Centennial Campus at North Carolina State University as the 2007 AURP Award of Excellence for Outstanding Research/Science Park Achievement Award.

### Better Innovation

Technology transfer is more than just licensing and patents - it is human capital, conferences, and core research. Our goal should be to balance tech transfer, and grow commercialization. A 2002 study demonstrates that university technology commercialization is facilitated by conferences, consulting, conversations, and co-supervision, all of which take place in the physical connectedness in America's Communities of Innovation. These factors are cited more often than patents as vehicles of commercialization to the private sector. Clustering of research centers, venture accelerators, hotels, housing and mixed-use activities within Innovation Zones will improve technology commercialization in the U.S.

LICENSES AND PATENTS COMPARED TO OTHER ROUTES OF UNIVERSITY TECHNOLOGY TRANSFER; FROM SEAN SAFFORD NSF WORKSHOP 3 DECEMBER 2007







## NOAA CENTER FOR WEATHER & CLIMATE PREDICTION AT THE UNIVERSITY OF MARYLAND RESEARCH PARK



The power of research and science parks to improve technology commercialization can be demonstrated by the example of Purdue chemistry professor Peter Klissinger. Thirty-two years ago, Dr. Klissinger started Bioanalytical Systems at the Purdue Research Park in West Lafayette, Indiana. The company has since developed drugs that treat depression, migraine headaches, cancer, and pain. It now employs over 380 people.

### *A Better World*

The National Oceanic and Atmospheric Administration (NOAA) also moved a large component of its national prediction and research centers to the University of Maryland Research Park. This relationship is already improving science. Dr. Rita Colwell, the former director of the National Science Foundation, is a Distinguished University of Maryland Professor. One of her long-term international interests is examining methods of reducing cholera, which continues to be a major water-borne pathogen and scourge in many developing countries. Thanks to the NOAA partnership, Dr. Colwell was introduced to remote-sensing software modeling tools that NOAA had used for coastal prediction. Through the use of these tools, Dr. Colwell models the spread of cholera, thereby improving predictability and saving lives. Scientific discovery and data analysis that would have taken her months, if not years, will now take place in weeks thanks to these new NOAA tools. Dr. Colwell's scientific contribution to pathogen research has been enhanced in a way that could not have been imagined had NOAA and the university not become research park partners.



**CLEMSON UNIVERSITY - INTERNATIONAL CENTER FOR AUTOMOTIVE RESEARCH**

Photography by Rob Belknap

A number of American Innovation Zone initiatives were offered as a part of the Building a Stronger America Act (S. 1372/H.R. 4250). Sponsored by U.S. Senator Mark Pryor (D-AR) and by U.S. Representatives Heather Wilson (R-NM), Gabrielle Giffords (D-AZ), John Spratt (D-SC), and Lamar

Smith (R-TX), this legislation offers several proposals to foster further development of science and research parks. These proposals offer a critical counterpart to the Innovation Zone concept, offering initial funding for development of construction plans, loan guarantees for construction of

research and science parks, and a series of studies designed to focus on international partnerships and further research and science park expansion.

#### KEY FEATURES OF S. 1373

Amends the Stevenson-Wylder Act to authorize grants for the development of feasibility studies and plans for the construction of new or expansion of existing science parks.

Creates loan guarantees for project construction related to science parks.

Establishes a framework for the Secretary of Commerce to evaluate, in partnership with the National Academy of Sciences (NAS), a recurring three year review of science park development.

#### 110TH CONGRESS 1ST SESSION **S. 1373**

To provide grants and loan guarantees for the development and construction of science parks to promote the clustering of innovation through high technology activities.

IN THE SENATE OF THE UNITED STATES

MAY 11, 2007

Mr. Pryor introduced the following bill, which was read twice and referred to the Committee on Commerce, Science, and Transportation

#### A BILL

To provide grants and loan guarantees for the development and construction of science parks to promote the clustering of innovation through high technology activities.

1 *Be it enacted by the Senate and House of Representatives*  
2 *of the United States of America in Congress assembled,*

3 SECTION 1. SHORT TITLE.

4 This Act may be cited as the "Building a Stronger  
5 America Act".



# REWARDING COMMUNITIES OF INNOVATION

## EXPANDING THE RESEARCH AND DEVELOPMENT TAX CREDIT

Once a unique and innovative idea pioneered in the U.S., research and development tax credits and incentives have now become a standard element of encouraging investment in research. However, while the U.S. was once a leader in advancing these credits, it now lags behind many other nations in offering tax incentives. Congress must take action to ensure that the U.S. restores its competitive advantage by reauthorizing the Research and Development Tax Credit, expanding its reach to favor Innovation Zones, and making the credit permanent.

The Research and Development Tax Credit expired at the close of 2007. Under the last extension, Congress created an Alternative Simplified

formula, and the "alternative incremental research credit" (AIRC). In general, the credit can be claimed against Qualified Research Expenses (QRE's), including in-house wages and supplies, computer "time sharing" costs, and up to 65 percent of contract research expenses.

The Research and Development credit not only provides a direct tax benefit for tenants in incubators and research parks, but also encourages private sector partners to outsource research initiatives to claim the credit. More importantly, among countries with significant research and development investments, the U.S. is falling behind those nations that offer permanent tax benefits for research and develop-

have considerably more flexibility than start-up businesses in terms of where they choose to conduct research.

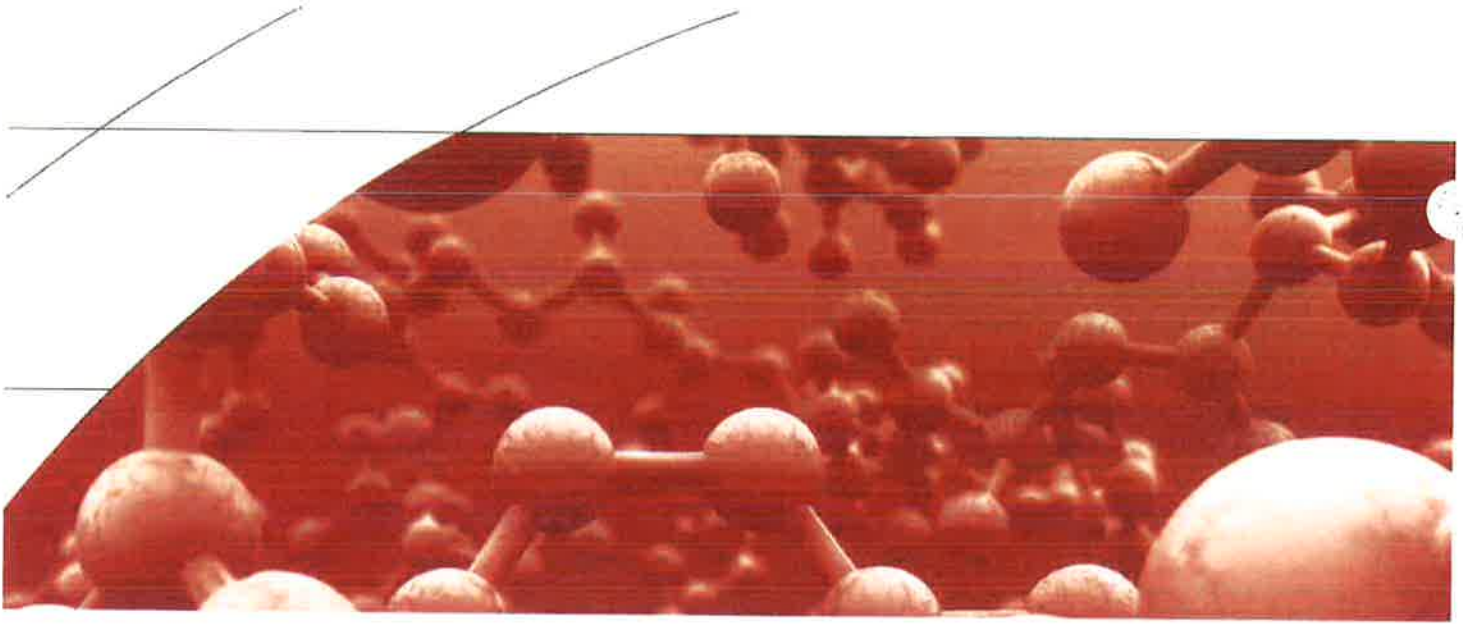
In 2005, roughly 30 percent of the entities claiming the tax credit had assets of \$1 million or less. More than 50 percent had assets less than \$5 million. For these firms, the percentage of the tax credit was higher than other businesses. In total, more than \$6.3 billion in credits were claimed in the 2005 tax year. Importantly, roughly 70 percent of the credits claimed were related to wages - meaning that the direct impact of the credit is focused heavily on paying research teams.<sup>10</sup>

**IN 2003, DESPITE THE EXISTENCE OF A U.S. RESEARCH AND DEVELOPMENT TAX CREDIT, U.S. SUBSIDIARIES NEVERTHELESS INVESTED \$2.5 BILLION ON RESEARCH AND DEVELOPMENT IN CANADA, WHICH OFFERS A 20 PERCENT TAX DEDUCTION, AND HAS MADE A CONCERTED EFFORT TO MARKET THEIR RESEARCH ENVIRONMENT TO U.S. BUSINESS. THIS DEMONSTRATES THE CRITICAL IMPORTANCE OF TAX CREDITS THAT SUPPORT RESEARCH INITIATIVES.**

Credit (ASC) of 12 percent, which was designed to offer a more robust credit for small businesses and entities that are largely research-driven (i.e., without commercial products in the pipeline). The ASC was offered as an additional option for calculating the credit, adding to the existing 20 percent "traditional"

ment. Australia, Canada, France, India, Indonesia, Ireland, Japan, the Netherlands, Pakistan, Portugal, Singapore, Spain, and the United Kingdom all offer permanent credits, creating substantial incentives in an already competitive global market. This is particularly important to global companies, who

<sup>10</sup> *Supporting Innovation and Economic Growth*, April 2008 Ernst & Young study (<http://www.investinamericafuture.org/PDFs/R&DTaxCreditStudy2008final.pdf>).



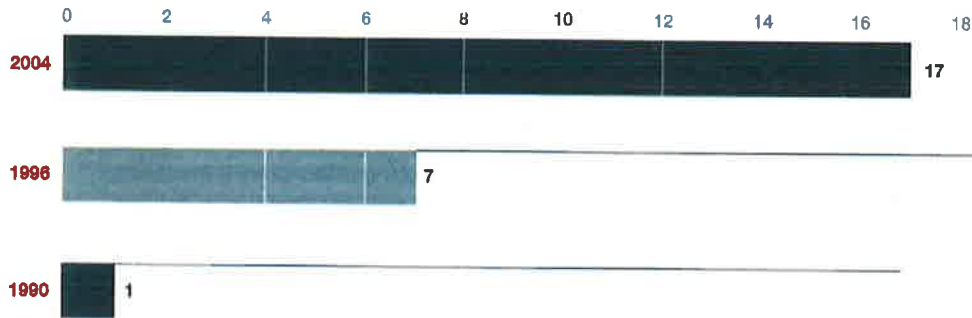
Extending a permanent research and development credit, with an expanded benefit available in American Innovation Zones, is a critical component of any effort to maintain the U.S. as a center for innovative research. Its absence is a competitive disadvan-

tage for any effort to attract the best available talent and to spur research investment by the private sector.

In 1990, the U.S. ranked first in tax generosity of R&D among the 30 leading industrial nations that made up the

Organization of Economic Cooperation and Development (OECD). By 2004, the U.S. had fallen to 17th. America must recommit to offering robust incentives that attract investment.

**U.S. RANK IN TAX GENEROSITY OF R&D AMONG 30 OECD NATIONS, 2004-30**



OECD data including Jacek Warda, op. cit. from Robert Atkinson testimony before US Committee on Science and Technology, US Congress Oct. 4, 2007





# COLLABORATION AND COMMERCIALIZATION

## INTEGRATING FEDERAL LABS: Integrating Federal Labs into Communities of Innovation; Data Mining of Federal Research

### *Integrating Federal Labs into Communities of Innovation*

Federal and national labs managed by the U.S. Government have not been as central to local technology development as they could be. They suffer from a lack of administrative and legal flexibility, limited resources for technology commercialization and the lack of a mission to work with private sector firms.

By contrast, labs managed as government owned-contractor operated (gocos) have associated research parks, venture funds and entrepreneurial leave policies for researchers. The Sandia Science and Technology Park in New Mexico, adjacent to the Sandia National Laboratories, is a leading example.

The National Governors Association has called for better technology transfer from federal labs, and we echo that call. Federal labs should be considered key elements in our national innovation strategy, and local partners in our Innovation Zones with universities, incubators, and Enhanced Use Lease tenants. Many national labs in other countries have technology development missions and are key players in regional technology development.

Federal labs perform nearly \$20 billion a year in internal intramural research, which is approximately the same amount performed by colleges and

universities. These labs are home to many Nobel Prize researchers. To more effectively transfer developed technologies, a federal technology foundation should be established to work with federal government labs. This could enable them to more effectively commercialize technology and use existing federal research assets. Universities have used such foundations to manage the non-linear and business aspects of technology transfer, and engage the university in the local business community. The Wisconsin Alumni Research Foundation (WARF) is the best-known example.

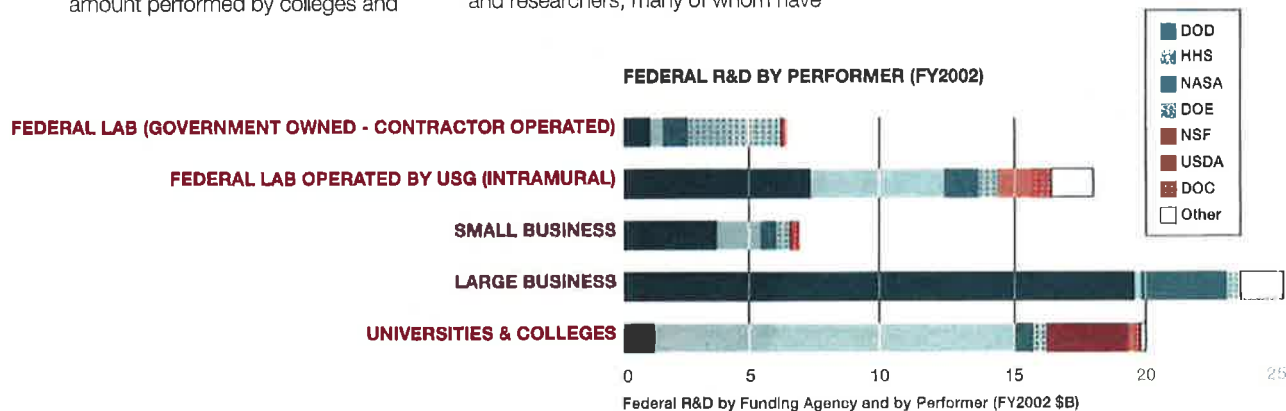
Some federal foundation models exist—such as the congressionally-chartered Jackson Foundation at the U.S. Uniform Health Sciences University—but a national foundation would ensure that all federal labs are being optimized to contribute to national technology competitiveness and reduce legal and bureaucratic barriers. Additionally, such a foundation could link federal equipment and federal researchers more effectively with the private sector, and help to address conflicts of interest and related topics.

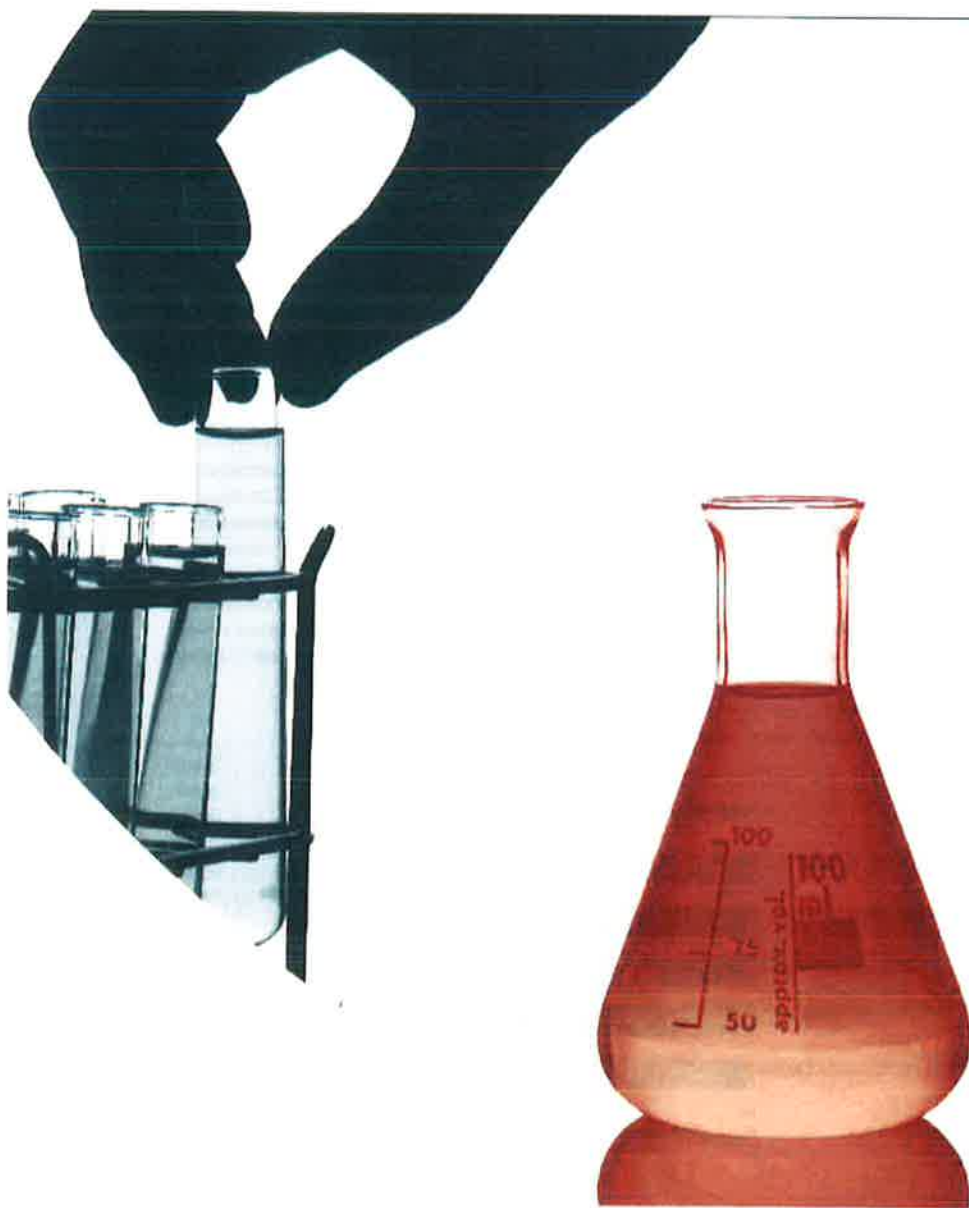
With the impending retirement of many of the nation's top scientists from U.S. federal labs, we need to ensure that these labs recruit young scientists and researchers, many of whom have

entrepreneurial instincts and passion. A federal lab-wide foundation, based on university models, could take on technology commercialization and related activities for intramural research labs. This could help unlock these resources more effectively for national technology competitiveness.

### *Data mining of federal research*

Sophisticated algorithms and data mining tools are being used with research databases to discover patterns of knowledge and create new companies to populate our nation's research parks and incubators. In an information-dominated society, data is one of the key enablers of innovation. The U.S. funded-RaDiUS, a database originally created by the Office of Science and Technology Policy, was the principal database of research grants funded by the U.S. Government. However, federal funding for RaDiUS was discontinued in 2007. This lack of funding creates an information void and no government-wide database. To ensure our Communities of Innovation have an understanding of the billions of dollars of research and development funded by the U.S. Government, a comprehensive government-wide database is necessary to ensure that important national innovation assets are properly leveraged.







# INVESTING IN CAPITAL

## THE NEED FOR HUMAN CAPITAL FROM GLOBAL PLAYERS

The marketplace for research talent and capital is global and increasingly competitive. In this environment, the skilled U.S. research workforce is declining, with fewer Americans attaining higher education in research sciences. Across the globe, other nations are seeking ways to attract new talent, or to encourage their citizens that study abroad to return home. These initiatives include:

- The proposed European Union (EU) "Blue Card" that would allow non-EU skilled workers to be employed in any EU country, a significant liberalization of EU policy.
- China's "green passage" program, initiated in 2007, which offers returning Chinese a series of tax benefits, guaranteed university placements for returning children, and exemption from household registration requirements.

In 2008, under existing immigration restrictions, the H-1B visa cap was limited to 85,000 visas. 65,000 of those visas are available as a base amount, with an additional 20,000 visas available for foreign graduates with advanced degrees from the U.S. Universities. The severe limitations on visas for highly skilled workers are one area where the U.S. lags many countries around the globe. Congressional efforts to address immigration policy have become mired in political gridlock, with high profile legislation failing to survive a Senate filibuster, and election-year politics effectively halting further action until 2009. In order to ensure continued retention of highly-skilled researchers and technicians, the U.S. must offer competitive immigration incentives that welcome foreigners into our Communities of Innovation, and retain their talents through the H-1B visa process.

In the arena of foreign investment, the U.S. is currently in the process of clarifying its foreign investment rules as a result of the passage of the Foreign Investment and National Security Act of 2007 (FISIA). FISIA formalized the existing process for reviewing foreign acquisitions in the U.S., and required the Department of Treasury to issue new regulations governing the foreign transaction (Committee on Foreign Investment, or CFIUS) review process. Many in the business community have filed comments in support of these new regulations, particularly because they contain an express exemption for "Greenfield" investment in the U.S. by foreign entities. This creates a clear expression of support for foreign direct investment in research, but there remain other policy initiatives that could further encourage "in-migration" of research resources, and ideally foreign start-up companies, into the U.S.

To increase the ability of the U.S. to attract this type of investment, Congress should support the "soft landing" strategy developed and supported by the National Business Incubation Association (NBIA). This program recognizes those incubators that have fostered an environment that provides critical resources to foreign businesses seeking to expand into new markets. Business incubators that receive the NBIA Soft Landings designation frequently offer some or all of the following resources:

- Translation services;
- Language training;
- Regulatory and administrative transition assistance;
- Cultural training;
- Visa assistance;
- Patent assistance;
- Resources for meeting import/export laws.

Federal support, and greater coordination among agencies, could bolster these efforts and link the soft landing concept with additional governmental support or preferences in the arena of grants, research, or visa allocations. Encouraging foreign companies and start-up businesses to engage in research in the U.S., creating Communities of Innovation that welcome global cooperation, will serve a central role in ensuring that America remains competitive in the race for international talent and resources.

**POLICY RECOMMENDATION:  
EXPAND H-1B VISA AND EXPLORE  
NEW VISA INITIATIVES FOR RESEARCH**

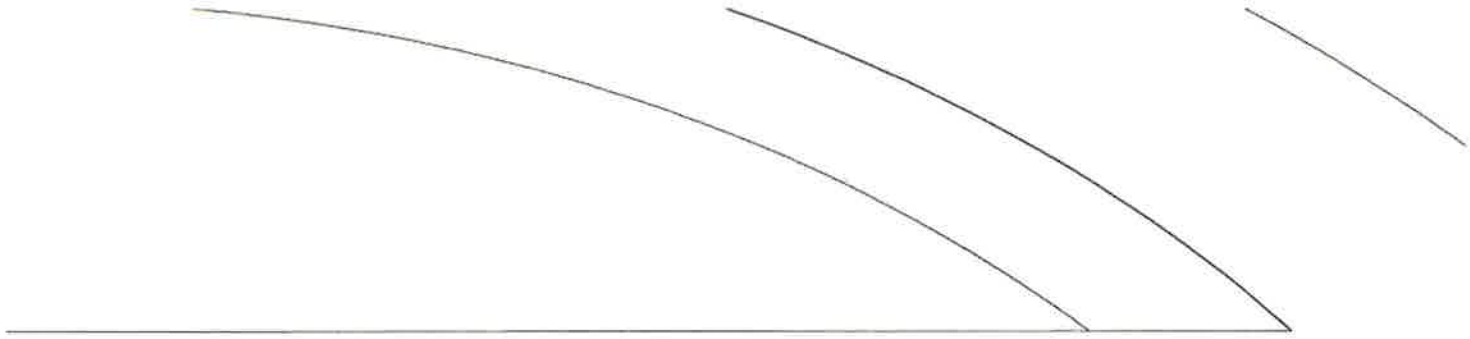


# CONCLUSION

America stands at a crossroads for competitiveness and innovation. We can choose to adopt policies that enhance collaboration, encourage new models for research, and attract global talent to our Communities of Innovation, or we can continue to lose access to the best the world has to offer. The landscape for research is changing dramatically as countries across the globe are investing substantial sums in developing large, well-funded research communities, offering expanded incentives to attract corporate research and development, and breaking down public-private barriers to collaboration. As members of our own Communities of Innovation across the U.S., we call on the new Administration, along with Congress, and federal government to take action on these core issues of American competitiveness.

Across the country, Communities of Innovation continue to support U.S. economic growth, providing an important employment multiplier, commercializing new technologies, and advancing new scientific research. A central priority for the government must be the cultivation and expansion of these success stories, and the development of policies that allow the U.S. to remain at the forefront of innovation and technological success.





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# FACTS



ASSOCIATION OF  
UNIVERSITY  
RESEARCH  
PARKS

*Creating Communities of Innovation*

The Association of University Research Parks (AURP) is a 22-year-old professional association of university related research and science parks. AURP's mission is to promote and support the development of university research and science parks worldwide.

AURP's membership includes planned and operating parks, many of which contain technology incubators. A variety of university, governmental, not-for-profit and private companies interested in the development and operation of high technology economic development projects comprise AURP's membership.

## **WHAT IS A RESEARCH PARK?**

AURP defines a university research park as a property-based venture, which has:

- Existing or planned land and buildings designed primarily for private and public research and development facilities, high technology and science based companies, and support services
- A contractual and/or formal ownership or operational relationship with one or more universities or other institutions of higher education and science research
- A role in promoting research and development by the university in partnership with industry, assisting in the growth of new venture, and promoting economic development
- A role in aiding the transfer of technology and business skills between the university and industry teams.
- A role in promoting technology-led economic development for the community or region.

## **ABOUT RESEARCH PARKS IN THE UNITED STATES AND CANADA:**

- University research parks in the United States and Canada encompass more than 47,000 acres and include 124 million square feet of space
- At full build out, these research parks will include 275 million square feet of space
- More than 300,000 workers in North America work in a university research park
- Every core job in a research park generates an average of 2.57 jobs in the economy

## **UPCOMING AURP EVENTS:**

**2008 Annual Conference** December 10-12 in St. Petersburg, Florida  
"21st Century University-Industry Networks: Global, Sustainable, and Connected"

**AURP 2009 Washington Summit Meeting** February 26 in Washington, D.C.

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# POLICY RECOMMENDATIONS

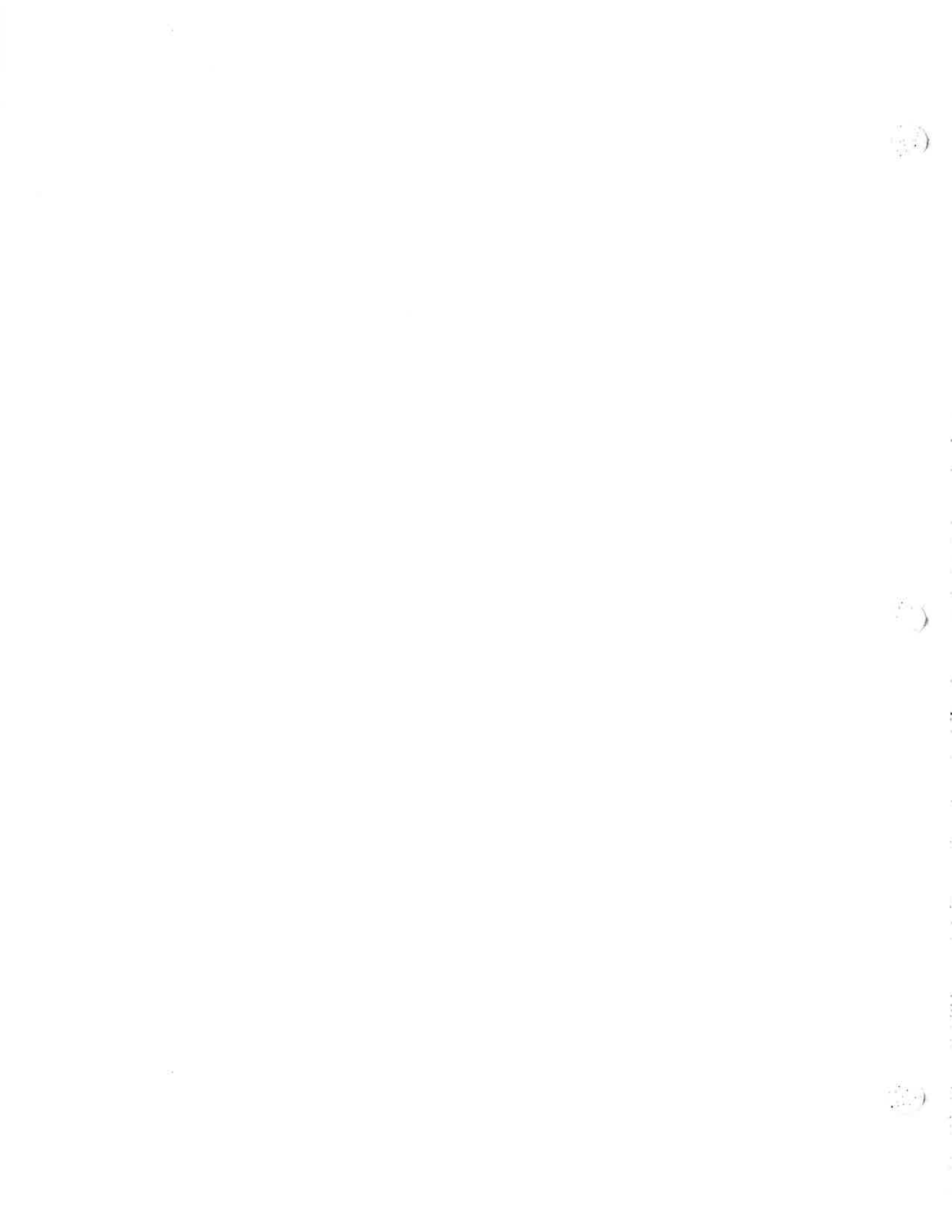


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*Creating Communities of Innovation*

- **Establish American Innovation Zones:** The Innovation Zones would serve as the centerpiece of efforts to modernize the U.S. approach to fostering competitive research and development. Innovation Zones are a critical next step towards American competitiveness, encouraging research in such a way as to accelerate investment and economic development around research clusters. The Innovation Zone approach envisions establishing objective criteria for national innovation assets, including research parks, technology incubators, universities, federal laboratories, and adjacent properties, and then providing regulatory reforms and economic incentives for their accelerated development.
- **Enact Federal Innovation Zone Partnership Program:** The federal government should establish a plan to competitively create research centers within the Innovation Zones that would require matching grants from state governments, local governments and private industry. These centers would focus on areas of high national needs, including energy research, homeland security, food safety, and global climate change.
- **Build Sustainable Communities of Innovation:** Incentives for sustainable 'smart growth' development should be central to establishing American Innovation Zones. The U.S. Department of Housing should explore best practices nationally to encourage density and mixed-use development in American Innovation Zones in urban areas, which will encourage researchers and entrepreneurs to live where they work, and reduce sprawl.
- **Encourage Federal Leasing and Federal Lab Construction in Innovation Zones:** The federal government should target federal leases for research and federal lab construction and related activities within American Innovation Zones.
- **Reform Federal Tax Provisions for Facilities Funded by Tax-Exempt Financing:** Current federal policy on corporate sponsored and/or funded research performed in facilities funded through tax-exempt bonds unduly restricts flexibility in negotiating corporate intellectual property (IP) rights. Eliminating the current IRS restrictions or increasing the safe harbors under IRS regulations in American Zones of Innovation to allow greater flexibility in intellectual property negotiations will improve U.S. competitiveness, and increase the likelihood that corporate R&D will stay in the U.S.
- **Create Enhanced Preferences for Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) and National Institute of Standards and Technology (NIST) Technology Innovation Program (TIP):** The federal government should provide incentives to small technology start-up companies located in American Zones of Innovation to be awarded SBIR, STTR, and NIST's new TIP contracts and grants. Cluster development, collaboration, and targeting the benefits of federal research dollars will provide incentive for new investment in the Innovation Zones, and improve the quality of research through greater cooperation among public and private researchers.
- **Solidify the Tax Benefits for Research and Development:** By reauthorizing the research and development tax credit, Congress will return the U.S. to an even playing field with many of its global competitors for research investment. Beyond this first step, Congress should offer an enhanced benefit for companies that perform their research within an Innovation Zone, or who contract with Innovation Zones entities for research or development.
- **Expand Enhanced Use Leasing (EUL) Authority:** Expand current enhanced use lease authority to all federal agencies to create more American Innovation Zones adjacent to federal labs.
- **Establish a Federal Technology Foundation**  
A federal technology foundation should be established to work with government managed federal labs. A foundation modeled on existing university research foundations could enable these laboratories to more effectively commercialize technology and use existing federal research assets for local technology-led economic development.
- **Develop Comprehensive Government-wide Database**  
Access to a government-wide database on all federal R&D funding is necessary to ensure that important national innovation assets are properly understood and leveraged for technology innovation.
- **Fully Fund the America COMPETES Act**  
The U.S. Congress took a great step forward in passing the America COMPETES Act in 2007. The Act authorizes a substantial federal investment in high risk, high reward research and improves funding to many of the U.S. science agencies. Research institutions and companies in Innovation Zones stand to benefit from the America COMPETES Act, but the Act has not been fully funded by Congress. The new Administration and the next Congress must make funding the America COMPETES Act a priority.
- **Import Innovation:** Research parks and incubators in American Innovation Zones should be targeted to recruit foreign technology companies using 'soft landing' techniques similar to those pioneered by the National Business Incubation Association (NBIA).
- **Welcome Human Innovation Capital to the U.S.:** In order to ensure continued retention of highly-skilled researchers and technicians, the U.S. must offer competitive immigration incentives that welcome foreigners into our communities of innovation, and retain their talents through the H-1B visa process.





OTHER INFORMATION

